MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

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TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NORTH CAROLINA

EIGHTY-FOURTH ANNUAL SESSION

HELD AT

WINSTON SALEM, NORTH CAROLINA

May 3-4-5, 1937

PRESIDENT
C. F. STROSNIDER, M.D., GOLDSBORO

SECRETARY-TREASURER
T. W. M. LONG, M.D., ROANOKE RAPIDS

COMMITTEE ON PUBLICATIONS

Dr. T. W. M. Long, *Secretary-Treasurer, Chairman ex-officio*.....Roanoke Rapids

Dr. B. C. Willis.....Rocky Mount

Dr. E. C. Judd.....Raleigh

"It is understood that the Society is not to be considered as endorsing all the views and opinions of authors of papers published in the Transactions of the Society."

—*Extract from By-Laws, Chapter 10, Section 8.*

EARLY HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM ORGANIZATION TO 1804

Date	Place	President	Vice-Presidents	Corresponding Secretary	Secretary	Recording Secretary	Treasurer	Censors
Dec. 17, 1799, or April 16, 1800	Raleigh	Richard Fenner	Nathaniel Loomis John Claiborne	Calvin Jones		Wm. B. Hill	Cargill Massenburg	Sterling Wheaton James Webb Jas. John Pasteur Jason Hand
Dec. 1, 1800	Raleigh	Richard Fenner			Sterling Wheaton			
Dec. 1, 1801	Raleigh	John C. Osborne	Thomas Mitchell Richard Fenner	Calvin Jones	Sterling Wheaton		Cargill Massenburg	James Webb John Sibley
1802	Raleigh	John C. Osborne		Calvin Jones				
1803	Raleigh	John C. Osborne		Calvin Jones				
1804	Raleigh	John C. Osborne		Calvin Jones				

HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM 1849 TO 1936
*Missing Data Not to be Found in Record

	Date	Place of Meeting	Number in Attendance	President	Vice-Presidents*	Secretary	Treasurer*	Members on Roll*	Honorary Members*	Honorary Fellows*
	1849	Raleigh	25	F. J. Hill		W. H. McKee		25		
1	1850	Raleigh	21	E. Strudwick	F. J. Haywood, C. E. Johnson, J. E. Williamson, W. G. Thomas.	W. H. McKee	W. G. Hill	38	9	
2	1851	Raleigh	23	E. Strudwick	C. E. Johnson.	W. H. McKee	W. G. Hill	46	0	
3	1852	Wilmington	38	J. E. Williamson	Thomas N. Cameron, William G. Hill, Johnston B. Jones, N. J. Pittman.	E. B. Haywood	J. J. W. Tucker	72	12	
4	1853	Fayetteville	24	J. E. Williamson	William G. Hill, Johnston B. Jones, J. B. G. Myers, N. J. Pittman.	W. W. Harris	Daniel Dupree	80	14	
5	1854	Raleigh	37	J. H. Dickson	N. J. Pittman, J. B. G. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell	Daniel Dupree	84	17	
6	1855	Salisbury	23	J. H. Dickson	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	S. S. Satchwell	J. B. Dunn	96	18	
7	1856	Raleigh	35	C. E. Johnson	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	S. S. Satchwell	J. B. Dunn	101	22	
8	1857	Edenton	25	C. E. Johnson	Marcellus Whitehead, O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas	J. B. Dunn	113	16	
9	1858	New Bern	69	W. H. McKee	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	W. G. Thomas	J. B. Dunn	172	18	
10	1859	Statesville	81	W. H. McKee	James G. Ramsey, P. E. Hines, J. R. Mercer, W. T. Howard.	W. G. Thomas	C. W. Graham			
11	1860	Washington	64	N. J. Pittman	P. T. Henry, R. H. Winborne, M. Whitehead, T. S. Leach.	W. G. Thomas	C. W. Graham	233	18	
12	1861	Morganton	23	N. J. Pittman	J. J. Summerell, C. T. Murphy, G. W. Hodges, W. A. B. Norcom.	W. G. Thomas	C. W. Graham	244	18	
13	1866	Raleigh	20	J. J. Summerell	E. Burke Haywood, R. H. Winborne, W. L. Barrow, J. W. Jones.	W. G. Thomas	C. W. Graham			
14	1867	Tarboro	41	W. G. Thomas		S. S. Satchwell	C. W. Graham	288	11	
15	1868	Warrenton	27	S. S. Satchwell	Hugh Kelly, George A. Foote, Charles J. O'Hagan, J. H. Baker.	Thomas F. Wood	J. W. Jones			
16	1869	Salisbury	36	E. B. Haywood	Thomas E. Wilson, A. B. Pierce, C. T. Murphy, M. A. Locke.	Thomas F. Wood	J. W. Jones			
17	1870	Wilmington	38	C. J. O'Hagan	E. A. Anderson, F. N. Luckey, W. R. Sharpe, R. L. Payne.	Thomas F. Wood	J. W. Jones			
18	1871	Raleigh	35	Hugh Kelley	D. N. Patterson, R. C. Pearson, J. B. Seavy, G. L. Kirby.	Thomas F. Wood	J. W. Jones			
19	1872	New Bern	34	W. G. Hill	H. W. Faison, R. I. Hicks, G. H. Macon, W. A. B. Norcom.	James McKee	J. W. Jones			
20	1873	Statesville	43	M. Whitehead	W. T. Ennett, William Little, Charles Duffy, P. T. Jerman.	James McKee	H. T. Bahnson			

21	1874	Charlotte.....	56	W. A. B. Norcom .	J. B. Jones, R. F. Lewis. C. G. Cox, J. L. Knight.	James McKee.....	H. T. Bahnson...	.....	.....	.....
22	1875	Wilson.....	60	J. W. Jones.....	Walker Debnam, J. A. Gibson, William Little, D. N. Patterson.	James McKee.....	H. T. Bahnson....	148	5	.....
23	1876	Fayetteville...	33	Peter E. Hines....	J. H. Baker, G. G. Smith, T. D. Haigh, J. K. Hall.	James McKee.....	H. T. Bahnson....	157	4	.....
24	1877	Salem.....	42	George A. Foote...	J. K. Hall, B. W. Robinson, A. Holmes, A. A. Hill.	James McKee.....	A. G. Carr.....	177	4	.....
25	1878	Goldsboro....	79	R. L. Payne.....	E. M. Rountree, Richard Anderson, S. B. Flowers, L. A. Stith.	L. J. Picot.....	A. G. Carr.....	194	6	.....
26	1879	Greensboro...	109	Chas. Duffy, Jr....	J. A. Gibson, Willis Alston, James McKee, A. A. Hill.	L. J. Picot.....	A. G. Carr.....	198	6	.....
27	1880	Wilmington...	105	J. F. Shaffner.....	J. K. Hall, W. C. McDuffie, W. R. Wilson, R. F. Lewis.	L. J. Picot.....	A. G. Carr.....	225	6	.....
28	1881	Asheville.....	92	R. B. Haywood...	J. E. McKee, W. H. Lilly, R. H. Speight, W. J. H. Bellamy.	L. J. Picot.....	A. G. Carr.....	254	6	.....
29	1882	Concord.....	65	Thos. F. Wood....	T. J. Moore, D. J. Cain, S. E. Evans, John McDonald.	L. J. Picot.....	A. G. Carr	297	7	.....
30	1883	Tarboro.....	112	J. K. Hall.....	A. W. Knox, J. M. Hadley, E. S. Foster, John Whitehead.	L. J. Picot.....	A. G. Carr.....	310	7	.....
31	1884	Raleigh.....	112	A. B. Pierce.....	F. W. Potter, G. W. Graham, R. Dillard, G. W. Long.	L. J. Picot.....	A. G. Carr.....	348	7	.....
32	1885	Durham.....	173	W. C. McDuffie...	James McKee, T. E. Anderson, W. H. Waitehead, A. G. Carr.	W. C. Murphy....	R. L. Payne, Jr....	424	6	.....
33	1886	New Bern....	113	Joseph Graham...	H. T. Bahnson, L. J. Picot, J. L. McMillan, W. W. Faison.	J. M. Baker.....	R. L. Payne, Jr....	438	7	.....
34	1887	Charlotte.....	112	H. T. Bahnson....	G. G. Smith, J. L. Nicholson, C. M. Van Poole, H. B. Ferguson.	J. M. Baker.....	R. L. Payne, Jr....	452	7	.....
35	1888	Fayetteville...	133	T. D. Haigh.....	W. T. Ennett, J. A. Dunn, T. E. Anderson.	J. M. Baker.....	C. M. Van Poole..	306	6	.....
36	1889	Elizabeth City.	50	W. T. Ennett.....	W. J. Jones, S. W. Stevenson, G. W. Long.	J. M. Baker.....	C. M. Van Poole..	410	6	.....
37	1890	Oxford.....	160	G. G. Thomas.....	R. L. Payne, Jr., Richard Dillard, S. D. Booth.	J. M. Hays.....	C. M. Van Poole..	414	6	.....
38	1891	Asheville.....	135	R. H. Lewis.....	S. W. Battle, J. L. Nicholson, W. H. Lilly.	J. M. Hays.....	C. M. Van Poole..	422	6	.....
39	1892	Wilmington...	162	W. T. Cheatham..	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. D. Hilliard.	J. M. Hays.....	C. M. Van Poole..	431	6	.....
40	1893	Raleigh.....	221	J. W. McNeill....	W. C. Galloway, H. H. Harris, J. M. Hadley, Thomas Hill.	R. D. Jewett.....	M. P. Perry.....	447	5	3
41	1894	Greensboro...	166	W. H. H. Cobb...	J. A. Hodges, R. W. Tate, Willis Alston, M. H. Fletcher.	R. D. Jewett.....	M. P. Perry.....	454	5	3
42	1895	Goldsboro....	.....	J. H. Tucker.....	J. Howell Way, W. H. Harrell, O. McMullan, C. A. Misenheimer.	R. D. Jewett.....	M. P. Perry.....	436	7	3
43	1896	Winston-Salem.....	158	R. L. Payne.....	S. D. Booth, J. P. Munroe, J. A. Burroughs, J. E. Grimsley.	R. D. Jewett.....	M. P. Perry.....	452	7	3
44	1897	Morehead City	103	P. L. Murphy.....	J. C. Walton, A. A. Kent, M. R. Adams, B. L. Long.	R. D. Jewett.....	M. P. Perry.....	406	6	3
45	1898	Charlotte.....	*....	Francis Duffy.....	E. C. Register, A. T. Cotton, J. B. H. Knight, F. H. Russell.	R. D. Jewett.....	M. P. Perry.....	437	6	21

HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM 1849 TO 1936

*Missing Data Not to be Found in Record

Date		Place of Meeting	Number in Attendance	President	Vice-Presidents*	Secretary	Treasurer*	Members on Roll*	Honorary Members*	Honorary Fellows*
46	1899	Asheville.....	152	L. J. Picot.....	I. W. Faison, J. W. White, H. H. Dodson, W. C. Brownson.	Geo. W. Presley...	G. T. Sikes.....	489	6	16
47	1900	Tarboro.....	115	George W. Long ..	C. M. Van Poole, James M. Parrott, T. B. Williams, W. D. Hilliard.	Geo. W. Presley...	G. T. Sikes.....	482	6	21
48	1901	Durham.....	186	Julian M. Baker...	M. H. Fletcher, C. A. Julian, D. A. Stanton, E. M. Summerell.	Geo. W. Presley...	G. T. Sikes.....	515	5	18
49	1902	Wilmington...	147	Robert S. Young..	A. G. Carr, E. D. Dixon-Carroll, I. M. Taylor, J. M. Parrott.	Geo. W. Presley...	G. T. Sikes.....	546	5	20
50	1903	Hot Springs ..	155	A. W. Knox.....	E. G. Moore, C. A. Julian, W. W. McKenzie, J. L. Nicholson.	J. Howell Way....	G. T. Sikes.....	530	6	19
51	1904	Raleigh.....	326	H. B. Weaver.....	John Hey Williams, John C. Rodman, S. F. Pfohl.	J. Howell Way....	G. T. Sikes.....	1,033	8	17
52	1905	Greensboro...	361	David T. Tayloe..	C. A. Julian, John T. Burrus, I. W. Faison.	J. Howell Way....	G. T. Sikes.....	1,175	8	17
53	1906	Charlotte.....	406	E. C. Register....	L. B. McBrayer, W. H. Cobb, Jr., W. O. Spencer.	J. Howell Way....	G. T. Sikes.....	1,234	8	16
54	1907	Morehead City	217	Samuel D. Booth..	C. M. Strong, J. E. McLaughlin, W. F. Hargrove.	David A. Stanton .	H. McK. Tucker..	888	7	16
55	1908	Winston-Salem.....	372	J. Howell Way....	J. E. Stokes, J. A. Turner, W. H. Dixon.	David A. Stanton .	H. McK. Tucker..	998	7	28
56	1909	Asheville.....	337	J. F. Highsmith...	C. M. Van Poole, D. A. Garrison, D. O. Dees.	David A. Stanton .	H. McK. Tucker..	1,067	7	25
57	1910	Wrightsville Beach.....	276	J. A. Burroughs†.. E. J. Wood.....	E. J. Wood, John Q. Myers, L. D. Wharton.	David A. Stanton .	H. D. Walker.....	1,080	8	35
58	1911	Charlotte.....	412	C. M. Van Poole..	J. V. McGougan, W. E. Warren, L. N. Glenn.	David A. Stanton .	H. D. Walker.....	880	8	45
59	1912	Hendersonville	296	A. A. Kent.....	J. P. Monroe, W. P. Horton, J. G. Murphy.	David A. Stanton .	H. D. Walker.....	950	8	44
60	1913	Morehead City	232	J. P. Munroe.....	F. R. Harris, E. S. Bullock, L. B. Morse.	John A. Ferrell....	H. D. Walker.....	1,133	8	40
61	1914	Raleigh.....	431	J. M. Parrott.....	E. T. Dickinson, J. T. J. Battle, D. E. Sevier.	John A. Ferrell....	H. D. Walker.....	1,228	8	47
62	1915	Greensboro...	443	L. B. McBrayer...	J. J. Phillips, C. W. Moseley, S. M. Crowell.	John A. Ferrell....	H. D. Walker.....	1,221	9	68
63	1916	Durham.....	406	M. H. Fletcher....	J. L. Nicholson, L. N. Glenn, W. H. Hardison.	Benj. K. Hays....	W. M. Jones.....	1,228	10	79
64	1917	Asheville.....	280	Charles O'H. Laughinghouse..	D. J. Hill, J. L. Spruill, J. H. Shuford.	Benj. K. Hays....	W. M. Jones.....	1,271	11	81
65	1918	Pinehurst.....	291	I. W. Faison.....	Wm. deB. MacNider, Jos. B. Greene, Ben F. Royal.	Benj. K. Hays .	W. M. Jones.....	1,087	11	81

†Died during his term of office; succeeded by E. J. Wood, first vice-president.

							Sec-Treas.	Acting Sec'y-Treas.		
66	1919	Pinehurst	335	Cyrus Thompson	J. W. Halford, T. W. Davis, A. McN. Blair.		Benj. K. Hays	L. B. McBrayer	1,306	11	100
67	1920	Charlotte	479	C. V. Reynolds	H. D. Walker, F. Stanley Whitaker, Thomas I. Fox.		Benj. K. Hays	L. B. McBrayer	1,497	12	100
68	1921	Pinehurst	404	T. E. Anderson	C. S. Lawrence, W. H. Ward, J. M. Manning.		Benj. K. Hays	L. B. McBrayer	1,491	12	93
								Sec'y-Treas.			
69	1922	Winston-Salem	507	H. A. Royster	W. T. Parrott, B. C. Nalle, J. R. McCracken.			L. B. McBrayer	1,571	12	100
70	1923	Asheville	356	J. W. Long	F. M. Hanes, T. C. Johnson, B. L. Long.			L. B. McBrayer	1,592	9	101
71	1924	Raleigh	525	J. V. McGougan	J. L. Spruill, ‡Eugene B. Glenn, D. A. Garrison.			L. B. McBrayer	1,604	9	106
72	1925	Pinehurst	550	Albert Anderson	W. L. Dunn, A. E. Bell, K. G. Averitt.			L. B. McBrayer	1,657	10	116
73	1926	Wrightsville Beach	445	Wm. deB. MacNider	J. P. Matheson, W. W. Dawson, H. H. Bass.			L. B. McBrayer	1,663	10	107
74	1927	Durham	653	John Q. Myers	J. W. Carroll, A. Y. Linville, C. H. Cocke.			L. B. McBrayer	1,691	10	121
75	1928	Pinehurst	611	John T. Burrus	G. H. Macon, R. F. Leinbach, W. R. Griffin.			L. B. McBrayer	1,738	11	143
76	1929	Greensboro	671	Thurman D. Kitchin	Dr. W. L. Dunn,* Asheville, Dr. D. T. Tayloe, Jr., Washington, Dr. W. D. James, Hamlet.			L. B. McBrayer	1,666	11	146
77	1930	Pinehurst	701	L. A. Crowell	W. B. Murphy, Wm. E. Warren, N. B. Adams.			L. B. McBrayer	1,711	11	155
					President-Elect	Vice-Presidents					
78	1931	Durham	714	J. G. Murphy	M. L. Stevens	C. A. Julian, Greensboro J. W. Davis, Statesville		L. B. McBrayer	1,600	10	164
79	1932	Winston-Salem	740	M. L. Stevens	Jno. B. Wright	C. W. Banner, Greensboro W. W. Sawyer, Elizabeth City		L. B. McBrayer	1,559	10	166
80	1933	Raleigh	714	Jno. B. Wright	I. H. Manning	J. R. McCracken, Waynesville W. G. Suiter, Weldon		L. B. McBrayer	1,363	10	181
81	1934	Pinehurst	728	I. H. Manning	P. P. McCain	R. L. Felts, Durham H. D. Walker, Elizabeth City		L. B. McBrayer	1,563	10	210
82	1935	Pinehurst	706	P. P. McCain	Paul H. Ringer	J. F. McKay, Buie's Creek William Allen, Charlotte		L. B. McBrayer	1,619	10	215
83	1936	Asheville	583	Paul H. Ringer	C. F. Strosnider	J. K. Pepper, Winston-Salem E. S. Bulluck, Wilmington		L. B. McBrayer	1,462	10	235
84	1937	Winston-Salem	767	C. F. Strosnider	Wingate M. Johnson	C. A. Woodard, Wilson Jno. F. Brownsberger, Fletcher		L. B. McBrayer T. W. M. Long	1,503	7	253

ROSTER OF MEMBERS OF THE VARIOUS BOARDS OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA

FIRST BOARD

JAMES H. DICKSON, Wilmington....1859-1866
CHARLES E. JOHNSON, Raleigh....1859-1866
CALEB WINSLOW, Hertford....1859-1866
OTIS F. MANSON, Townsville....1859-1866
WILLIAM H. McKEE, Raleigh....1859-1866
CHRISTOPHER HAPOLDT, Morganton....1859-1866
J. GRAHAM TULL, New Bern....1859-1866
SAMUEL T. IREDELL, Secretary....1959-1866

SECOND BOARD

N. J. PITTMAN, Tarboro....1866-1872
E. BURKE HAYWOOD, Raleigh....1866-1872
R. H. WINBORNE, Edenton....1866-1872
S. S. SATCHWELL, Rocky Point....1866-1872
J. J. SUMMERELL, Salisbury....1866-1872
R. B. HAYWOOD, Raleigh....1866-1872
M. WHITEHEAD, Salisbury....1866-1872
J. F. SHAFNER, Salem....1866-1872
WILLIAM LITTLE, Secretary....1866-1867
THOMAS F. WOOD, Secretary, Wilmington....1867-1872

THIRD BOARD

CHARLES J. O'HAGAN, Greenville....1872-1878
W. A. B. NORCOM, Edenton....1872-1878
C. TATE MURPHY, Clinton....1872-1878
GEORGE A. FOOTE, Warrenton....1872-1878
J. W. JONES, Tarboro....1872-1878
R. L. PAYNE, Lexington....1872-1878
CHARLES DUFFY, JR., Secretary, New Bern....1872-1878

FOURTH BOARD

PETER E. HINES, Raleigh....1878-1884
THOMAS D. HAIGH, Fayetteville....1878-1884
GEORGE L. KIRBY, Goldsboro....1878-1884
THOMAS F. WOOD, Wilmington....1878-1884
JOSEPH GRAHAM, Charlotte....1878-1884
[1]ROBERT I. HICKS, Williamston....1878-1880
[2]RICHARD H. LEWIS, Raleigh....1880-1884
HENRY T. BAHNSON, Secretary, Salem....1878-1884

FIFTH BOARD

WILLIAM R. WOOD, Scotland Neck....1884-1890
AUGUSTUS W. KNOX, Raleigh....1884-1890
FRANCIS DUFFY, New Bern....1884-1890
PATRICK L. MURPHY, Morganton....1884-1890
WILLIS ALSTON, Littleton....1884-1890
J. A. REAGAN, Weaverville....1884-1890
W. J. H. BELLAMY, Secretary, Wilmington....1884-1890

SIXTH AND SEVENTH BOARDS

R. L. PAYNE, JR., Lexington....1890-1892
GEORGE W. PUREFOY, Asheville....1890-1892
GEORGE G. THOMAS, Wilmington....1890-1894
ROBERT S. YOUNG, Concord....1890-1894
WILLIAM H. WHITEHEAD, Rocky Mount....1890-1896
GEORGE W. LONG, Graham....1890-1896
L. J. PICOT, Secretary, Littleton....1890-1896
JULIAN M. BAKER, Tarboro....1892-1898
H. B. WEAVER, Secretary, Asheville....1892-1898
[3]J. M. HAYS, Greensboro....1894-1897
[4]KEMP P. BATTLE, JR., Raleigh....1897-1900
[1]THOMAS S. BURBANK, Wilmington....1894-1898
[1]RICHARD H. WHITEHEAD, Chapel Hill....1896-1898

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[1]Resigned before expiration of term.
[2]Elected for unexpired term of Dr. Hicks.
[3]Died before the expiration of his term.
[4]Elected to serve unexpired term of Dr. Hays.

[2]WILLIAM H. H. COBB, Goldsboro....1898-1900
[3]J. HOWELL WAY, Secretary, Waynesville....1898-1902
DAVID T. TAYLOE, Washington....1896-1902
THOMAS E. ANDERSON, Secretary, Statesville....1896-1902
[4]ALBERT ANDERSON, Wilson....1898-1902
[4]EDWARD C. REGISTER, Charlotte....1898-1902
[4]THOMAS S. McMULLAN, Hertford....1900-1902
[4]JOHN C. WALTON....1900-1902

EIGHTH BOARD

A. A. KENT, Lenoir....1902-1908
CHARLES O'H. LAUGHINGHOUSE, Greenville....1902-1908
M. H. FLETCHER, Asheville....1902-1908
JAMES M. PARROTT, Kinston....1902-1908
J. T. J. BATTLE, Greensboro....1902-1908
FRANK H. RUSSELL, Wilmington....1902-1908
[1]GEORGE W. PRESSLY, Secretary, Charlotte....1902-1906
[5]G. T. SIKES, Secretary, Grissom....1906-1908

NINTH BOARD

LEWIS B. McBRAYER, Asheville....1908-1914
JOHN C. RODMAN, Washington....1908-1914
WILLIAM M. McKENZIE, Salisbury....1908-1914
HENRY H. DODSON, Greensboro....1908-1914
JOHN BYNUM, Winston-Salem....1908-1914
J. L. NICHOLS, Richlands....1908-1914
BENJ. K. HAYS, Secretary, Oxford....1908-1914

TENTH BOARD

ISAAC M. TAYLOR, Morganton....1914-1920
JOHN Q. MYERS, Charlotte....1914-1920
JACOB F. HIGHSMITH, Fayetteville....1914-1920
MARTIN L. STEVENS, Asheville....1914-1920
[6]CHARLES T. HARPER, Wilmington....1914-1915
[7]EDWIN G. MOORE, Elm City....1915-1920
[8]JOHN G. BLOUNT, Washington....1914-1920
HUBERT A. ROYSTER, Secretary, Raleigh....1914-1920

ELEVENTH BOARD

LESTER A. CROWELL, Lincolnton....1920-1926
WILLIAM P. HOLT, Duke....1920-1926
J. GERALD MURPHY, Wilmington....1920-1926
LUCIUS N. GLENN, Gastonia....1920-1926
CLARENCE A. SHORE, Raleigh....1920-1926
WILLIAM M. JONES, Greensboro....1920-1926
KEMP P. BONNER, Secretary, Morehead City....1920-1926

TWELFTH BOARD

PAUL H. RINGER, Asheville....1926-1932
W. HOUSTON MOORE, Wilmington....1926-1932
T. W. M. LONG, Ronoake Rapids....1926-1932
[6]W. W. DAWSON, Grifton....1926-1932
J. K. PEPPER, Winston-Salem....1926-1932
FOY ROBERSON, Durham....1926-1932
JOHN W. McCONNELL, Secretary, Davidson....1926-1932
[9]DAVID T. TAYLOE, JR., Washington....1930-1932

THIRTEENTH BOARD

BEN F. ROYAL, Morehead City....1932-1938
BENJ. J. LAWRENCE, Secretary, Raleigh....1932-1938
F. WEBB GRIFFITH, Asheville....1932-1938
HAMILTON W. McKAY, Charlotte....1932-1938
J. W. VERNON, Morganton....1932-1938
W. H. SMITH, Goldsboro....1932-1938
[6]K. G. AVERITT, Cedar Creek....1932-1938
[10]ROSCOE D. McMILLAN, Red Springs....1936-1938

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[1]Resigned before the expiration of his term.
[2]Elected to serve the unexpired term of Dr. Burbank.
[3]Elected to serve the unexpired term of Dr. Whitehead.
[4]Elected for short term expiring in 1902.
[5]Elected to serve the unexpired term of Dr. Pressly.
[6]Died before the expiration of his term.
[7]Elected to serve the unexpired term of Dr. Harper.
[8]Died a few months before the expiration of his term; such a short time that the vacancy was not filled.
[9]Elected to serve unexpired term of Dr. W. W. Dawson.
[10]Elected to serve unexpired term of Dr. Averitt.

NOTE: In 1890 the Medical Society of the State of North Carolina adopted the plan of electing members of the Board in such a manner that the terms would expire at different intervals of two years. This practice was followed for twelve years, or until 1902, when the plan was abandoned; an equivalent of two terms of six years each. It is evident that the Society arranged to abandon the policy as early as 1898, as two members were elected for short terms, and two years later two other members were elected for still shorter terms. It is therefore impossible to separate the sixth and seventh Boards, since the membership was overlapping.

ROSTER OF MEMBERS NORTH CAROLINA STATE BOARD OF HEALTH FROM ORGANIZATION IN 1877 TO 1936

Name	Address	Appointed by	Term
S. S. Satchwell, M.D., President	Rocky Point	State Society	1877 to 1878
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1877 to 1878
Joseph Graham, M.D.	Charlotte	State Society	1877 to 1878
Charles Duffy, Jr., M.D.	New Bern	State Society	1877 to 1878
Peter E. Hines, M.D.	Raleigh	State Society	1877 to 1878
George A. Foote, M.D.	Warrenton	State Society	1877 to 1878
S. S. Satchwell, M.D., President	Rocky Point	State Society	1878 to 1884
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1878 to 1884
Charles J. O'Hagan, M.D., President	Greenville	State Society	1878 to 1882
George A. Foote, M.D.	Warrenton	State Society	1878 to 1882
Marcellus Whitehead, M.D.	Salisbury	State Society	1878 to 1880
R. L. Payne, M.D.	Lexington	State Society	1878 to 1880
H. G. Woodfin, M.D.	Franklin	Gov. Z. B. Vance	1878 to 1880
A. R. Ledeux, Chemist	Chapel Hill	Gov. Z. B. Vance	1878 to 1880
William Cain, Civil Engineer	Charlotte	Gov. Z. B. Vance	1878 to 1880
R. L. Payne, M.D.	Lexington	State Society	1881 to 1887
M. Whitehead, M.D., President	Salisbury	State Society	1881 to 1884
S. H. Lyle, M.D.	Franklin	Gov. T. J. Jarvis	1881 to 1883
William Cain, Civil Engineer	Charlotte	Gov. T. J. Jarvis	1881 to 1883
W. G. Simmons, Chemist	Wake Forest	Gov. T. J. Jarvis	1881 to 1883
J. W. Jones, M.D., President	Wake Forest	State Society	1883 to 1889
John McDonald, M.D.	Washington	State Society	1883 to 1889
S. H. Lyle, M.D.	Franklin	Gov. T. J. Jarvis	1883 to 1885
W. G. Simmons, Chemist	Wake Forest	Gov. T. J. Jarvis	1883 to 1885
Arthur Winslow, Civil Engineer	Raleigh	Gov. T. J. Jarvis	1883 to 1886
R. H. Lewis, M.D.	Raleigh	State Board of Health	1884 to 1886
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1885 to 1887
William D. Hilliard, M.D.	Asheville	State Society	1885 to 1891
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1885 to 1891
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1885 to 1887
J. H. Tucker, M.D.	Henderson	Gov. A. M. Scales	1885 to 1887
R. H. Lewis, M.D., Secretary	Raleigh	State Society	1887 to 1888
H. T. Bahnson, M.D., President	Winston	State Society	1887 to 1888
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1887 to 1889
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1887 to 1889
J. H. Tucker, M.D.	Henderson	Gov. A. M. Scales	1888 to 1891
J. L. Ludlow, Civil Engineer	Winston	Gov. A. M. Scales	1888 to 1891
J. H. Tucker, M.D.	Henderson	Gov. D. G. Fowle	1888 to 1891
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. D. G. Fowle	1889 to 1893
J. L. Ludlow, Civil Engineer	Winston	Gov. D. G. Fowle	1889 to 1892
J. A. Hodges, M.D.	Fayetteville	State Society	1889 to 1893
J. M. Baker, M.D.	Tarboro	State Society	1891 to 1893
J. H. Tucker, M.D.	Henderson	Gov. T. M. Holt	1891 to 1893
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. T. M. Holt	1891 to 1892
J. L. Ludlow, Civil Engineer	Winston	Gov. T. M. Holt	1891 to 1897
Thomas F. Wood, M.D., Secretary*	Wilmington	State Society	1892 to 1897
George G. Thomas, M.D., President	Wilmington	State Board of Health	1891 to 1895
S. Westray Battle, M.D.	Asheville	State Society	1892 to 1895
W. H. Harrell, M.D.	Williamston	State Society	1893 to 1895
John Whitehead, M.D.	Salisbury	State Board of Health	1893 to 1895
W. H. G. Lucas	White Hall	Gov. Elias Carr	1893 to 1895
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. Elias Carr	1893 to 1895
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1893 to 1895
R. H. Lewis, M.D., Secretary	Raleigh	Gov. Elias Carr	1894 to 1897
W. J. Lumsden, M.D.	Elizabeth City	Gov. Elias Carr	1895 to 1897
John Whitehead, M.D.	Salisbury	State Society	1895 to 1897
W. H. Harrell, M.D.	Williamston	State Society	1895 to 1897
W. P. Beall, M.D.	Greensboro	Gov. Elias Carr	1895 to 1897
R. H. Lewis, M.D., Secretary	Raleigh	Gov. Elias Carr	1895 to 1897
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. Elias Carr	1897 to 1899
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1897 to 1899
Charles J. O'Hagan, M.D.	Greenville	Gov. D. L. Russell	1897 to 1899
John D. Spicer, M.D.	Goldsboro	Gov. D. L. Russell	1897 to 1899
J. L. Nicholson, M.D.	Richlands	Gov. D. L. Russell	1897 to 1899
R. H. Lewis, M.D., Secretary	Raleigh	Gov. D. L. Russell	1899 to 1901
A. W. Shaffer, Civil Engineer	Raleigh	Gov. D. L. Russell	1899 to 1901
Charles J. O'Hagan, M.D.	Greenville	Gov. D. L. Russell	1899 to 1901
J. L. Nicholson, M.D.	Richlands	Gov. D. L. Russell	1899 to 1901
Albert Anderson, M. D.	Wilson	Gov. D. L. Russell	1899 to 1901
George G. Thomas, M.D., President	Wilmington	State Society	1899 to 1901
S. Westray Battle, M.D.	Asheville	State Society	1899 to 1901
H. W. Lewis, M.D.	Jackson	State Society	1899 to 1901

*Died in 1892, leaving a five-year unexpired term, which was filled by the Board.

MEMBERS STATE BOARD OF HEALTH—Continued

Name	Address	Appointed by	Term
H. H. Dodson, M.D.	Milton	State Society	1899 to 1901
R. H. Lewis, M. D., Secretary	Raleigh	Gov. C. B. Aycock	1901 to 1907
W. P. Ivey, M.D.	Lenoir	Gov. C. B. Aycock	1901 to 1907
George G. Thomas, M.D., President	Wilmington	Gov. C. B. Aycock	1901 to 1905
Francis Duffy, M.D.	New Bern	Gov. C. B. Aycock	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1901 to 1905
S. Westray Battle, M.D.	Asheville	State Society	1901 to 1907
H. W. Lewis, M.D.	Jackson	State Society	1901 to 1907
W. H. Whitehead, M.D.	Rocky Mount	State Society	1901 to 1905
J. L. Nicholson, M.D.	Richlands	State Society	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1903 to 1909
J. Howell Way, M.D.	Waynesville	Gov. R. B. Glenn	1905 to 1911
W. O. Spencer, M.D.	Winston	Gov. R. B. Glenn	1905 to 1911
George G. Thomas, M.D., President	Wilmington	State Society	1905 to 1911
Thomas E. Anderson, M.D.	Statesville	State Society	1905 to 1911
R. H. Lewis, M.D.	Raleigh	Gov. R. B. Glenn	1907 to 1913
E. C. Register, M.D.	Charlotte	Gov. R. B. Glenn	1907 to 1913
David T. Tayloe, M.D.	Washington	State Society	1907 to 1909
James A. Burroughs, M.D.[1]	Asheville	State Society	1907 to 1913
J. E. Ashcraft, M.D.	Monroe	State Board of Health	1909 to 1913
J. L. Ludlow, Civil Engineer	Winston-Salem	Gov. W. W. Kitchin	1909 to 1913
J. Howell Way, M.D., President	Waynesville	Gov. W. W. Kitchin	1911 to 1917
W. O. Spencer, M.D.	Winston-Salem	Gov. W. W. Kitchin	1911 to 1917
Thomas E. Anderson, M.D.	Statesville	State Society	1911 to 1917
Charles O'H. Laughinghouse, M.D.	Greenville	State Society	1911 to 1917
R. H. Lewis, M.D.	Raleigh	Gov. Locke Craig	1913 to 1919
Edw. J. Wood, M.D.	Wilmington	Gov. Locke Craig	1913 to 1919
A. A. Kent, M.D.[2]	Lenoir	State Society	1913 to 1915
Cyrus Thompson, M.D.	Jacksonville	State Society	1913 to 1919
Fletcher R. Harris, M.D.	Henderson	State Board of Health	1913 to 1919
J. L. Ludlow, Civil Engineer	Winston-Salem	Gov. Locke Craig	1915 to 1921
J. Howell Way, M.D., President	Waynesville	Gov. T. W. Bickett	1917 to 1923
E. C. Register, M.D.[1]	Charlotte	Gov. T. W. Bickett	1917 to 1923
Thomas E. Anderson, M.D.	Statesville	State Society	1917 to 1923
Charles O'H. Laughinghouse, M.D.	Greenville	State Society	1917 to 1923
Fletcher R. Harris, M.D.[3]	Henderson	State Society	1919 to 1923
A. J. Crowell, M.D.	Charlotte	Gov. T. W. Bickett	1919 to 1923
Chas. E. Waddell, C.E.[4]	Asheville	Gov. C. Morrison	1921 to 1923
Cyrus Thompson, M.D.	Jacksonville	State Society	1919 to 1925
R. H. Lewis, M.D.	Raleigh	Gov. T. W. Bickett	1919 to 1925
E. J. Tucker, D.D.S.	Roxboro	Gov. T. W. Bickett	1923 to 1925
J. Howell Way, M.D., President	Waynesville	Gov. C. Morrison	1923 to 1929
A. J. Crowell, M.D.	Charlotte	Gov. C. Morrison	1923 to 1929
James P. Stowe, Ph.G.	Charlotte	Gov. C. Morrison	1923 to 1927
D. A. Stanton, M.D.	High Point	State Board of Health	1923 to 1925
Thomas E. Anderson, M.D.	Statesville	State Society	1923 to 1929
Charles O'H. Laughinghouse, M.D.[5]	Greenville	State Society	1923 to 1926
Cyrus Thompson, M.D.[1]	Jacksonville	State Society	1925 to 1931
D. A. Stanton, M.D.	High Point	State Society	1925 to 1931
R. H. Lewis, M.D.[1]	Raleigh	Gov. A. W. McLean	1925 to 1931
Jno. B. Wright, M.D.[6]	Raleigh	Gov. A. W. McLean	1926 to 1931
E. J. Tucker, M.D.[6]	Roxboro	Gov. A. W. McLean	1925 to 1931
W. S. Rankin, M.D.[4]	Charlotte	State Board of Health	1926 to 1927
L. E. McDaniel, M.D.	Jackson	State Board of Health	1927 to 1929
Chas. C. Orr, M.D.	Asheville	Gov. A. W. McLean	1927 to 1929
Thomas E. Anderson, M.D.[6]	Statesville	State Society	1929 to 1935
L. E. McDaniel, M.D.[6]	Jackson	State Society	1929 to 1935
James P. Stowe, Ph.G.[6]	Charlotte	Gov. A. W. McLean	1927 to 1933
A. J. Crowell, M.D.[6]	Charlotte	Gov. O. Max Gardner	1929 to 1935
J. M. Parrott, M.D.[6]	Kinston	State Board of Health	1930 to 1931
Chas. C. Orr, M.D.[6]	Asheville	Gov. O. Max Gardner	1929 to 1935
J. M. Parrott, M.D.[5]	Kinston	State Society	1931 to 1935
C. V. Reynolds, M.D.	Asheville	State Society	1931 to 1935
L. B. Evans, M.D.	Windsor	State Society	1931 to 1933
S. D. Craig, M.D.	Winston-Salem	State Society	1931 to 1933
John T. Burrus, M.D.	High Point	Gov. O. Max Gardner	1931 to 1933
J. N. Johnson, D.D.S.	Goldsboro	Gov. O. Max Gardner	1931 to 1933
J. A. Goode, Ph.G.	Asheville	Gov. O. Max Gardner	1931 to 1933
H. L. Large, M.D.	Rocky Mount	Gov. O. Max Gardner	1931 to 1935
H. G. Baity, C.E.	Chapel Hill	Gov. O. Max Gardner	1931 to 1935

[1]Died leaving unexpired term. [2]Resigned to become member of General Assembly.
[3]Resigned to become Health Officer Vance County. [4]Resigned.
[5]Resigned to become Secretary of State Board of Health.
[6]Term terminated account reorganization State Board of Health by General Assembly.

Name	Address	Appointed by	Term
Grady G. Dixon, M.D.[7]	Ayden	Ex. Com. State Society	1931 to 1932
Grady G. Dixon, M.D.[7]	Ayden	State Society	1932 to 1935
S. D. Craig	Winston-Salem	State Society	1933 to 1937
W. T. Rainey, M.D.	Fayetteville	State Society	1933 to 1937
J. N. Johnson, D.D.S.	Goldsboro	Gov. J. C. B. Ehringhaus	1933 to 1937
Hubert B. Haywood, M.D.	Raleigh	Gov. J. C. B. Ehringhaus	1933 to 1937
James P. Stowe, Ph.G.	Charlotte	Gov. J. C. B. Ehringhaus	1933 to 1937
Grady G. Dixon, M.D.	Ayden	State Society	1935 to 1939
J. LaBruce Ward, M.D.	Asheville	State Society	1935 to 1939
H. Lee Large, M.D.	Rocky Mount	Gov. J. C. B. Ehringhaus	1935 to 1939
H. G. Baity, C.E.	Chapel Hill	Gov. J. C. B. Ehringhaus	1935 to 1939
S. D. Craig, M.D.	Winston-Salem	State Society	1937 to 1941
W. T. Rainey, M.D.	Fayetteville	State Society	1937 to 1941

[7]To fill vacancy caused by resignation of Dr. J. M. Parrott.

STATUS OF COUNTY MEMBERSHIP BY COUNTIES FOR YEARS 1923-1937

County	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Alamance-Caswell *a*	27	27	25	27	30	30	32	33	33	32	29	32	30	31	30
Alexander *b*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Alleghany *n*	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Anson	12	12	11	10	6	8	8	6	6	4	4	9	7	8	7
Ashe *p*	8	6	10	6	8	6	5	5	5	4	....	....	7	....	....
Avery *r*	5	5	5	5	6	6	6	5	5	5	....	5	5	5	5
Beaufort	17	14	17	17	17	17	16	18	15	15	12	13	15	10	9
Bertie	10	9	9	8	8	8	6	7	9	7	8	9	11	9	8
Bladen	4	3	8	7	8	8	8	8	8	8	5	6	6	6	...0
Brunswick	1	1	1	1	1	4	6	2	2	2	2	2	3	2	...0
Buncombe	99	105	97	102	118	120	118	113	112	105	83	107	115	106	98
Burke	15	13	14	11	11	12	12	17	17	17	17	12	10	13	18
Cabarrus	23	19	21	21	22	27	27	23	20	20	10	14	21	8	11
Caldwell	12	10	11	14	15	15	13	15	14	12	9	12	12	12	13
Camden *c*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Carteret	12	10	10	12	12	11	11	12	12	12	12	12	11	12	10
Caswell *d*	1	1	2	....	....	....	....	....	....	....	....	....	11	....	....
Catawba	20	19	16	16	21	16	17	13	13	16	8	16	16	16	14
Chatham	7	9	9	7	9	8	9	9	4	3	2	3	2	0	1
Cherokee	10	9	10	9	8	10	10	10	9	8	5	8	8	8	7
Chowan-Perquimans	7	8	5	9	10	9	7	8	6	7	6	7	5	4	2
Clay *e*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cleveland	18	18	17	19	20	20	22	23	19	22	21	20	21	22	21
Columbus	14	11	12	14	15	14	14	15	10	8	8	10	11	10	7
Craven	10	12	14	16	17	15	14	13	13	14	9	5	10	6	6
Cumberland	22	32	31	28	29	28	22	26	23	21	27	27	27	21	24
Currituck *s*	4	4	4	4	3	2	1	1	1	1	....	....	....	....	....
Dare *f*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Davidson	18	22	20	19	19	18	17	16	17	17	17	20	23	19	24
Davie	6	4	5	4	5	5	5	5	5	6	4	2	1	1	1
Duplin	12	12	13	13	13	9	11	9	11	7	2	2	9	2	2
Durham-Orange	43	47	53	60	64	63	65	67	76	77	76	76	85	87	81
Edgecombe-Nash	12	10	11	12	12	12	7	10	43	39	25	46	49	32	35
Forsyth	59	62	63	64	66	74	59	70	66	69	70	73	77	77	73
Franklin	12	12	12	12	10	12	11	10	9	7	7	9	8	9	9
Gaston	40	40	39	40	38	39	39	36	33	37	12	28	30	21	28
Gates	1	1	1	....	....	1	2	2	2	2	2	2	2	2	2
Graham	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Granville	12	13	13	12	12	14	13	13	13	12	10	10	11	10	11
Greene	5	6	5	5	5	5	5	5	5	5	5	6	5	6	6
Guilford	87	93	107	112	119	123	130	124	124	118	91	102	99	83	109
Halifax	18	21	20	16	14	17	17	16	15	14	13	15	18	17	25
Harnett	15	15	13	12	16	16	15	14	13	15	16	14	15	10	16
Haywood	13	13	14	14	13	8	14	14	12	13	15	20	19	21	22
Henderson *j*	....	....	....	17	19	16	16	19	14	12	9	17	17	13	14
Henderson-Polk *g*	13	13	14	....	....	....	....	....	....	....	....	....	....	....	....
Hertford	10	10	8	8	7	7	6	5	5	5	6	7	7	4	5
Hoke	8	9	11	10	11	12	14	14	14	12	11	13	14	13	11
Hyde	1	2	1	1	1	1	1	1	1	1	....	1	1	0	....
Iredell-Alexander	19	20	26	29	34	37	39	38	38	39	29	38	38	39	30
Jackson	6	8	7	7	6	5	6	6	3	7	2	4	7	4	6
Johnston	25	25	24	28	24	23	18	23	25	20	19	19	21	12	9
Jones	2	1	4	4	3	3	3	3	3	3	3	3	3	3	2
Lee	10	11	13	13	13	14	16	13	11	13	10	10	10	3	8
Lenoir	17	20	18	20	22	23	20	22	17	19	20	22	20	22	21
Lincoln	14	16	11	11	12	13	14	13	10	12	12	13	11	8	10
Macon-Clay	7	7	6	8	8	9	6	8	4	3	2	5	3	5	4
Madison	11	11	11	11	5	12	7	5	3	4	5	4	4	1	0
Martin *t*	13	10	10	10	10	10	10	8	7	4	....	....	....	....	....
Martin-Washington-Tyrrell	....	....	....	....	....	....	....	....	....	....	10	10	12	10	12
McDowell	6	7	8	7	8	7	9	12	10	10	11	10	13	10	6
Mecklenburg	115	109	121	117	104	119	125	128	124	117	104	108	116	116	125
Mitchell	....	....	....	....	....	....	....	....	....	....	....	3	2	3	3
Mitchell-Avery	....	....	....	....	....	....	....	....	....	....	8	....	....	....	....
Mitchell-Watauga	10	7	7	8	7	9	8	6	5	5	....	....	....	....	....
Montgomery	9	9	8	9	9	10	11	9	10	9	7	9	9	8	7
Moore	20	20	19	21	17	20	22	17	21	21	18	22	21	19	22
Nash *m*	30	33	34	32	31	30	30	33	....	....	....	....	....	....	....
New Hanover	46	44	42	40	41	38	32	38	37	35	25	35	39	34	36
Northampton	10	10	10	11	9	9	6	3	4	5	4	8	4	4	4
Onslow	5	6	6	5	5	6	5	5	5	6	6	6	5	2	5
Orange *h*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Pamlico	5	4	5	5	5	5	5	4	4	4	4	4	4	4	4
Pasquotank-Camden-Currituck-Dare	....	....	....	....	....	....	....	....	....	....	12	14	12	11	9

STATUS OF MEMBERSHIP BY COUNTIES—Continued

County	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Pasquotank-Camden-Dare	18	17	18	19	18	16	14	17	14	11	....	....	....	....	....
Pender	2	2	1	1	1	1	1	1	1	1	1	1	1	0	1
Perquimans *i*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Person	10	10	8	7	7	7	6	6	6	6	7	7	8	7	7
Pitt	23	24	26	24	26	31	24	27	27	20	14	22	26	24	26
Polk *j*	....	....	....	5	6	6	6	6	5	7	7	6	6	4	5
Randolph	14	13	14	12	10	11	10	8	7	14	10	11	13	10	9
Richmond	14	16	19	18	18	18	14	17	17	15	16	15	16	15	17
Robeson	27	29	30	31	28	28	21	24	21	22	23	25	27	28	29
Rockingham	21	23	26	23	24	21	20	24	24	21	22	23	21	18	20
Rowan	32	36	40	40	40	42	35	35	39	33	24	34	30	27	28
Rutherford	22	21	21	22	24	22	22	22	21	21	19	20	21	23	22
Sampson	13	17	15	14	13	13	10	13	13	14	14	14	14	14	16
Scotland	12	12	12	12	12	12	12	10	11	11	11	11	11	10	11
Stanly	12	15	14	13	15	14	14	16	15	13	12	16	17	18	19
Stokes	9	10	10	5	7	8	6	2	6	6	1	1	1	0	0
Surry *v*	24	26	22	17	20	22	20	20	13	17	12	....	....	....	....
Surry-Yadkin	....	....	....	....	....	....	....	....	....	....	....	25	22	17	15
Swain	3	1	1	1	....	....	....	....	....	....	....	3	0	4	5
Transylvania	6	4	8	4	5	7	4	2	2	1	3	2	2	2	0
Tyrrell *k*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Union	18	18	19	19	16	16	14	13	10	9	10	10	11	10	8
Vance	10	12	11	12	11	11	11	12	8	7	8	9	9	8	8
Wake	85	73	78	79	78	80	84	94	87	86	87	89	88	89	95
Warren	7	6	6	6	6	6	6	6	6	6	5	5	6	2	2
Washington-Tyrrell *u*	9	9	8	8	6	6	5	3	3	3	....	....	....	....	....
Watauga *l q*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Watauga-Ashe	....	....	....	....	....	....	....	....	....	....	3	5	6	5	5
Wayne	32	29	32	34	32	38	38	38	30	32	22	27	29	27	29
Wilkes *o*	10	10	10	9	14	11	10	10	11	10	....	....	....	....	....
Wilkes-Alleghany	....	....	....	....	....	....	....	....	....	....	9	13	10	14	13
Wilson	31	31	32	34	34	35	31	28	28	22	21	25	29	31	25
Yadkin *v*	3	2	3	2	2	3	5	10	....	4	1	....	....	....	....
Yancey	1	1	1	2	7	5	3	4	1	1	....	5	4	1	0
Totals	1592	1606	1657	1666	1691	1738	1669	1694	1600	1559	1363	1563	1619	1462	1503

a The figures for 1926 are for Alamance-Caswell; for the other years, for Alamance only; *b* See Iredell-Alexander; *c* See Pasquotank-Camden-Dare; *d* For 1926, see Alamance- Caswell; *e* See Macon-Clay; *f* See Pasquotank-Camden-Dare; *g* See Henderson or Polk for years after 1925; *h* See Durham-Orange; *i* See Chowan-Perquimans; *j* See Henderson-Polk for 1912-1925; *k* See Washington-Tyrrell; *l* See Mitchell-Watauga; *m* See Edgecombe-Nash for 1931; for the other years Edgecombe only; *n* See Wilkes-Alleghany; *o* See Wilkes-Alleghany; *p* See Watauga-Ashe; *q* See Watauga-Ashe; *r* See Mitchell-Avery; *s* See Pasquotank-Camden-Currituck-Dare; *t* See Martin-Washington-Tyrrell; *u* See Martin-Washington-Tyrrell; *v* See Surry-Yadkin.

HONORARY FELLOWS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Abel, J. F. ..... Waynesville
Abernathy, Claude O. ..... Raleigh
Abernathy, H. N. ..... Charlotte
*Achorn, John W. ..... Pinebluff
*Adams, C. A. ..... Durham
*Adams, Charles E. ..... Gastonia
*Adams, M. R. ..... Statesville
*Alexander, Annie L. ..... Charlotte
Alexander, Jas. R. ..... Charlotte
Allen, Jos. A. ..... New London
*Allen, Rufus L. ..... Waynesville
*Alston, B. P. ..... Epsom
*Ambler, C. P. ..... Asheville
Anders, McT. G. ..... Gastonia
*Anderson, Albert ..... Raleigh
Anderson, Chas. A. ..... Burlington
Anderson, Thos. Eli ..... Statesville
Anderson, Wade H. ..... Wilson
Archer, Isaac J. ..... Black Mountain
*Archery, L. M. ..... Concord
*Asbury, F. E. ..... Asheboro
*Ashecraft, J. E. ..... Fayetteville
Ashworth, Benj. L. ..... Marion
Ashworth, W. C. ..... Greensboro
*Attmore, Geo. S. ..... Stonewall
*Averitt, K. G. ..... Cedar Creek
Aydlett, H. T. ..... Greensboro
Aydlette, Jos. P. ..... Earl
*Bahnson, H. T. ..... Winston-Salem
*Baker, J. M. ..... Tarboro
Banner, Chas. W. ..... Greensboro
Basnight, Thos. G. ..... Stokes
*Barrier, P. A. ..... Mt. Pleasant
Bass, H. H. ..... Henderson
Battle, J. T. J. ..... Greensboro
*Battle, Kemp P. ..... Raleigh
*Battle, S. W. ..... Asheville
*Beall, Wm. P. ..... Greensboro
Bell, A. E. ..... Mooresville
Bellamy, Robert H. ..... Wilmington
*Bellamy, W. J. H. ..... Wilmington
*Blair, A. McNiel ..... Southern Pines
Blair, M. P. ..... Marshville
*Boddie, N. P. ..... Durham
*Bolton, Mahlon ..... Rich Square
Bonner, K. P. B. ..... Morehead City
Boone, W. H. ..... Durham
*Booth, Samuel D. ..... Oxford
Bostic, Wm. C. ..... Forest City
Bowman, H. P. ..... Greensboro
Brookshire, Harley G. ..... Asheville
Brown, G. A. ..... Mt. Ulla
Brown, G. W. ..... Raeford
Brown, J. P. ..... Fairmont
Brown, J. S., Sr. ..... Hendersonville
*Brownson, W. C. ..... Asheville
Buffaloe, J. S. ..... Garner
*Bullock, D. W. ..... Wilmington
Bullock, Thomas C. ..... Autryville
*Burrus, John T. ..... High Point
Burt, B. W. ..... Holly Springs
Burt, S. P. ..... Louisburg
Byerly, Andrew B. ..... Cooleemee
*Bynum, John ..... Winston-Salem
*Caldwell, D. G. ..... Concord
Carlton, R. L. ..... Winston-Salem
*Carroll, E. D. Dixon ..... Raleigh
Caviness, Zebulon M. ..... Raleigh
*Cheatham, Archibald ..... Durham
*Cheesborough, Thos. P. ..... Asheville
*Clark, G. L. ..... Clarkton
Clement, E. B. ..... Salisbury
Cobb, Wm. H., Jr. ..... Goldsboro
Cocke, Jere E. ..... Asheville
Cooper, Geo. M. ..... Raleigh
Cotton, Clyde E. ..... Asheville
*Council, J. B. ..... Salisbury
*Covington, J. M. ..... Wadesboro
Cox, E. L. ..... Jacksonville
Cranmer, J. B. ..... Wilmington
*Croom, J. D. ..... Maxton
Crowell, A. J. ..... Charlotte
Crowell, L. A. ..... Lincolnton
Daligny, Charles ..... Troy
*Dalton, David N. ..... Winston-Salem
Dalton, Wm. N. ..... Winston-Salem
Daniels, O. C. ..... Oriental
Davis, Thomas W. ..... Winston-Salem
Davidson, John E. S. ..... Charlotte
DeArmon, J. McC. ..... Charlotte
*Denny, Wm. W. ..... Pink Hill
Dickinson, E. T. ..... Wilson
*Dillard, Richard, Jr. ..... Edenton
Dixon, Guy E. ..... Hendersonville
*Dixon, Wm. H. ..... Ayden
*Dodson, H. H. ..... Greensboro
*Duffy, Charles ..... New Bern
*Duffy, Francis ..... New Bern
*Eddleman, H. M. ..... Gastonia
Edgerton, Jas. L. ..... Hendersonville
*Edwards, G. C. ..... Hookerton
Edwards, J. D. ..... Siler City
Elias, Lewis W. ..... Asheville
Eller, A. J. ..... Wilkesboro

* Deceased.

Ellis, R. C. ..... Shelby
*Evans, L. B. ..... Windsor
Everett, A. C. ..... Rockingham
*Faison, I. W. ..... Charlotte
*Faison, Wm. W. ..... Goldsboro
Fearing, Isaiah ..... Elizabeth City
*Fletcher, M. H. ..... Asheville
Flippin, J. M. ..... Pilot Mountain
Flippin, Samuel T. ..... Siloam
Fortune, Alex F. ..... Greensboro
*Fox, M. F. ..... Guilford College
*Freeman, Richard A. ..... Burlington
Galloway, W. C. ..... Wilmington
Garren, R. H. ..... Monroe
*Garrison, David A. ..... Gastonia
Gibbs, N. M. ..... New Bern
Gibbon, Robert L. ..... Charlotte
Gibson, John S. ..... Gibson
Gibson, M. R. ..... Raleigh
*Gilmer, Chas. S. ..... Greensboro, R. 6
Gilreath, Frank H. ..... N. Wilkesboro
Glascock, Joy H. ..... Greensboro
Glenn, Lucius N. ..... Gastonia
*Goley, Wm. R. ..... Graham
Goodman, A. B. ..... Lenoir
*Goodman, E. G. ..... Lanvale
*Goodman, A. W. ..... Raleigh
*Gouger, Geo. J. ..... Concord
Gove, Anna M. ..... Greensboro
Grady, James C. ..... Kenly
Grady, Wm. Earle ..... Tryon
*Graham, Joseph ..... Charlotte
*Graham, Wm. A. ..... Charlotte
*Griffin, J. A. ..... Clayton
Griggs, W. T. ..... Poplar Branch
Halford, J. W. ..... Lillington
*Hall, Wright ..... Wilmington
*Halsey, B. F. ..... Roper
Hardy, Ira M. ..... Kinston
*Hargrove, R. H. ..... Robersonville
Harper, J. H. ..... Snow Hill
Harrill, L. B. ..... Caroleen
*Harris, F. R. ..... Henderson
Harriss, I. A. ..... Weaversville
Harrison, Edmund ..... Greensboro
Harris, A. H. ..... Wilmington
Hathcock, Thos. A. ..... Norwood
Hays, Benj. K. ..... Oxford
*Haywood, F. J. ..... Raleigh
*Haywood, Hubert, Sr. ..... Raleigh
*Herring, B. S. ..... Wilson
Hicks, Calvin S. ..... Durham
Hicks, I. F. ..... Dunn
*Hicks, Romeo ..... Henrietta
*Hicks, Wm. N. ..... Durham
Highsmith, Chas. ..... Dunn
Highsmith, J. F. ..... Fayetteville
Highsmith, Seavy ..... Fayetteville
*Hill, L. H. ..... Germantown
Hill, Wm. I. ..... Albemarle
Hocutt, Battle A. ..... Clayton
Holloway, Robt. L. ..... West Durham
Holt, Wm. P., Sr. ..... Erwin
*Holt, Wm. T. ..... Greensboro
*Hooks, Thel ..... Smithfield
Hoover, C. H. ..... Crouse
Horton, W. C. ..... Raleigh
Houck, Albert F. ..... Lenoir
Houser, E. A. ..... Shelby
Hovis, Leighton W. ..... Charlotte
Hubbard, C. C. ..... Farmer
*Hudson, Wm. L. ..... Dunn
*Hughes, Francis W. ..... New Bern
Hunter, L. W. ..... Charlotte
Hutchens, E. M. ..... No. Wilkesboro
Ingram, Chas. B. ..... Mt. Gilead
*Irwin, J. R. ..... Charlotte
*Jenkins, Chas. L. ..... Raleigh
*Jewett, Robert D. ..... Wilmington
John, Peter ..... Laurinburg
Johnson, N. M. ..... Durham
Johnson, Thos. C. ..... Lumberton
Jonas, John F. ..... Marion
*Jones, Clara E. ..... Goldsboro
*Jones, A. G. ..... Walnut Cove
Jones, R. DuVal ..... New Bern
Jones, W. M. ..... Greensboro
*Jordan, Chas. S. ..... Asheville
*Jordan, T. M. ..... Raleigh
Jordan, Wm. S. ..... Fayetteville
Judd, J. M. ..... Varina
*Julian, Charles A. ..... Greensboro
*Kapp, Henry H. ..... Winston-Salem
Kent, Alfred A. ..... Winter Park, Fla.
Kerr, J. Edwin ..... Winston-Salem
King, Parks M. ..... Charlotte
King, Richard M. ..... Concord
Kirby, Guy S. ..... Marion
Kirk, W. R. ..... Hendersonville
Kinsman, Henry ..... Hamlet
*Knight, J. B. H. ..... Williamston
Knight, Wm. P. ..... Greensboro
Kornegay, Lemuel W. ..... Rocky Mount
*Knox, A. W. ..... Raleigh
Koonce, S. E. ..... Wilmington
Lafferty, Robt. H. ..... Charlotte
Lamm, Isaac W. ..... Raleigh
Lattimore, E. B. ..... Shelby

* Deceased.

*Laughinghouse, Chas. O'H.....Raleigh
Ledbetter, James McQ.....Rockingham
Lee, Lawrence V.....Lattimore
*Leggett, Kenelm.....Hobgood
*Lewis, Geo. W.....Wilson
Lewis, H. W.....Jackson
*Lewis, R. H.....Raleigh
Lilly, Jas. M.....Fayetteville
Linville, A. Y.....Winston-Salem
*Lockett, Everett A.....Winston-Salem
*Long, Benj. L.....Hamilton
*Long, Geo. W.....Graham
Long, H. F.....Statesville
*Long, J. W.....Greensboro
Love, Bedford E.....Roxboro
*Love, W. J.....Wilmington
*Lyle, S. H.....Franklin
MacFadyen, Paul R.....Concord
McAnally, W. J.....High Point
McBrayer, L. B.....Southern Pines
McCain, Wm. R.....High Point
McCampbell, John.....Morganton
McCracken, C. M.....Fairview
McCracken, J. R.....Waynesville
*McDonald, A. D.....Wilmington
McGeachy, R. S.....Weldon
McGee, J. W.....Raleigh
McGehee, John Wm.....Reidsville
McIver, Lynn.....Sanford
*McKay, A. M.....Summerville
*McKay, John A.....Buies Creek
McKay, Joseph F.....Buies Creek
McKee, James.....Raleigh
*McKenzie, W. W.....Salisbury
McLaughlin, C. S.....Charlotte
McLaughlin, J. E.....Statesville
McLean, John W.....Godwin
McLeod, A. H.....Aberdeen
*McMillan, Benj. F.....Red Springs
*McMillan, J. D.....Lumberton
*McMillan, J. L.....Red Springs
*McMillan, W. D.....Wilmington
*McNeill, J. W.....Fayetteville
*McNeill, Wm. M.....Buies Creek
McPhail, L. D.....Charlotte
McPherson, S. D.....Durham
Malloy, S. A.....Yanceyville
Manning, I. H.....Chapel Hill
*Manning, J. M.....Chapel Hill
Mariner, N. B.....Belhaven
Matheson, James P.....Charlotte
Matthews, Jas. O.....Clinton
Matthews, M. L.....Sanford
Meadows, W. J.....Greensboro
Mebane, W. C.....Wilmington
*Melvin, Wayman C.....Linden
Menzies, H. C.....Hickory
*Michaux, E. R.....Greensboro
*Miller, J. F.....Goldsboro
Miller, Robert B.....Goldsboro
*Minor, Chas. L.....Asheville
*Misenheimer, C. A.....Charlotte
*Misenheimer, Theo. F.....Morven
Monk, Henry L.....Salisbury
*Monroe, W. A.....Sanford
*Montgomery, John C.....Charlotte
Moore, C. E.....Wilson
*Moore, Edwin G.....Elm City
Morris, J. A.....Oxford
Moseley, Chas. W.....Greensboro
Munroe, J. P.....Charlotte
*Murphy, John G.....Wilmington
Murphy, W. B.....Snow Hill
Myers, John Q.....Charlotte
Nalle, B. C.....Charlotte
Neal, John W.....Monroe
Nelson, R. J.....Robersonville
Newell, H. A.....Henderson
Nichols, Rhodes E.....Durham
*Nicholson, J. L.....Richland
Nicholson, P. A.....Washington
*Nicholson, Sam T.....Washington
*Nisbet, W. O.....Charlotte
*Noble, R. J.....Selma
Nobles, Jos. E.....Greenville
Oates, George.....Grover
Orr, Charles C.....Asheville
Orr, Porter B.....Asheville
Paddison, John R.....Kernersville
*Parker, G. E.....Benson
*Parrott, J. M.....Kinston
Parrott, Wm. Thomas.....Kinston
*Pate, Wm. T.....Gibson
Patterson, Jos. F.....New Bern
Peeler, John H.....Salisbury
*Pemberton, Wm. D.....Concord
Person, James B., Jr.....Selma
*Perry, M. P.....Macon
*Petrie, Robt. Wm.....Murphy
*Pfohl, Samuel F.....Winston-Salem
*Pharr, T. F.....Concord
*Pharr, Wm. W.....Charlotte
Phifer, Edward W.....Morganton
*Phillips, Matthew D.....Dalton
Pickett, John A.....Burlington
*Picot, L. J.....Littleton
*Pope, Henry T.....Lumberton
Pressly, G. W.....Charlotte

* Deceased.

*Prince, D. M. ..... Laurinburg
*Quickel, Thos. C. ..... Gastonia
Rankin, W. S. ..... Charlotte
Ray, John B. ..... Leaksville
Ray, O. L. ..... Raleigh, Rt. 1
Reaves, W. P. ..... Greensboro
Redding, Alex H. ..... Asheboro
*Register, Edw. C. ..... Charlotte
Register, F. M. ..... Kinston
Reid, Geo. P. ..... Forest City
Reitzel, Claude E. ..... High Point
Reynolds, C. V. ..... Asheville
Rhodes, James S. ..... Williamston
Ricks, Leonard E. ..... Fairmont
Riddle, J. B. ..... Morganton
Ringer, Paul H. ..... Asheville
*Ritter, F. W. ..... Movock
*Roberson, Chas. ..... Greensboro
Rodman, J. C. ..... Washington
*Rodwell, J. W. ..... Mocksville
Rogers, Jas. Rufus ..... Raleigh
Rogers, Wiley A. ..... Franklin
Ross, Geo. H. ..... East Durham
Royall, M. A. ..... Elkin
Royster, H. A. ..... Raleigh
Royster, S. S. ..... Shelby
*Royster, W. I. ..... Raleigh
Salley, E. McQueen ..... Hendersonville
Saunders, Jos. H. ..... Williamston
Sawyer, C. J. ..... Windsor
Sawyer, W. W. ..... Elizabeth City
*Schaub, O. P. ..... Winston-Salem
*Schonwald, J. T. ..... Wilmington
*Sevier, D. E. ..... Asheville
Sevier, J. T. ..... Asheville
*Schaffner, J. F., Sr. ..... Winston-Salem
*Shamburger, J. B. ..... Star
Sharpe, Frank L. ..... Statesville
*Shaw, W. G. ..... Wagram
Shields, H. B. ..... Carthage
Sikes, G. L. ..... Salemburg
*Sikes, G. T. ..... Creedmoor
Skinner, Louis C. ..... Greenville
Slate, John S. ..... Winston-Salem
Slate, W. C. ..... Spencer
*Smith, J. B. ..... Pilot Mountain
*Smith, R. A. ..... Goldsboro
*Smithwick, Jas. E. ..... Jamesville
Smoot, J. E. ..... Concord
*Snipes, E. P. ..... Jonesboro
Spainhour, Ellis H. ..... Winston-Salem
*Speight, R. H., Sr. ..... Whitakers
Spencer, W. O. ..... Winston-Salem
*Stamps, Thos. ..... Lumber Bridge
Stanton, D. A. ..... High Point
*Stevens, J. A. ..... Clinton
Stevens, M. L. ..... Asheville
*Stewart, H. D. ..... Monroe
*Stokes, Jas. Ernest ..... Salisbury
Street, M. E. ..... Glendon
Strickland, Edw. F. ..... Winston-Salem
Stringfield, Samuel L. ..... Waynesville
Stringfield, Thos. ..... Waynesville
*Strong, Chas. Moore ..... Charlotte
*Summerell, E. M. ..... China Grove
*Summers, Chas. L. ..... Baltimore, Md. (Forsyth Co.)
Sutton, Carl W. ..... Richlands
Swann, Jos. F. ..... Gastonia
*Tayloe, D. T., Sr. ..... Washington
*Taylor, I. M. ..... Morganton
Taylor, J. N. ..... Greensboro
Taylor, Wm. L. ..... Oxford
Tennent, G. S. ..... Asheville
*Thomas, G. G. ..... Wilmington
Thompson, Alex. Frank ..... Troy
Thompson, C. D. ..... High Point
*Trantham, H. T. ..... Salisbury
Tucker, John Hill ..... Charlotte
*Tull, Henry ..... Kinston
*Turner, J. P. ..... Greensboro
Tyson, T. D. ..... Mebane
*Van Poole, C. M. ..... Salisbury
Vestal, W. J. ..... Lexington
*Von Ruck, Karl ..... Asheville
Walker, H. D. ..... Elizabeth City
Ward, Jesse E. ..... Robersonville
*Ward, W. H. ..... Plymouth
*Way, J. Howell ..... Waynesville
Weaver, H. B. ..... Asheville
Weaver, W. J. ..... Asheville
Webb, B. G. ..... Andrews
Wessell, Jno. C. ..... Wilmington
West, Robt. M. ..... Salisbury
*Wharton, L. D. ..... Smithfield
Whisnant, A. M. ..... Charlotte
*Whitaker, R. A. ..... Kinston
*White, J. W. ..... Wilkesboro
*Whitehead, John ..... Salisbury
*Whitehead, W. H. ..... Rocky Mount
Whitfield, Wm. Cobb ..... Salisbury
*Whittington, W. P. ..... Asheville
Whittington, Wm. W. ..... Snow Hill
Wilkins, S. A. ..... Dallas
Wilcox, J. W. ..... West End
Williams, Albert F. ..... Wilson
Williams, Claude B. ..... Elizabeth City
Williams, John D. ..... Guilford Station

* Deceased.

*Williams, J. H. ..... Asheville
Willis, A. P. ..... Candler
Wilson, A. R. ..... Greensboro
*Wilson, Robt. B. ..... Newton Grove
Wood, J. W. ..... Boiling Springs
Woodson, Charles W. ..... Salisbury
Wright, Jno. B. ..... Raleigh
Yarborough, Richard F. ..... Lopisburg
*Young, R. S. ..... Concord

HONORARY MEMBERS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

*L. McL. Tiffany ..... Baltimore, Md.
*W. W. Keen ..... Philadelphia, Pa.
*J. Allison Hodges ..... Richmond, Va.
*R. L. Payne ..... Norfolk, Va.
*J. N. McCormack ..... Bowling Green, Ky.
R. L. Payne, Jr. ..... Norfolk, Va.
*J. L. Ludlow, C.E. ..... Winston-Salem
Paul V. Anderson ..... Richmond, Va.
Stuart McGuire ..... Richmond, Va.
William J. Mayo ..... Rochester, Minn.
William Seaman Bainbridge ..... New York, N. Y.
William Sharpe ..... New York, N. Y.
*William McKim Marriott ..... St. Louis, Mo.
James K. Hall ..... Richmond, Va.

* Deceased.

MOORE COUNTY MEDICAL SOCIETY MEDAL

In 1927 the Moore County Medical Society kindly put up enough money, the interest from which would pay for a medal to be given for the best paper read before the meeting each year. No one is eligible to receive this medal except Fellows of the Medical Society of the State of North Carolina in good standing; no invited guest is allowed to compete.

Each Section Chairman selects a committee of three to pass on the best paper written in their section. These six papers are turned over to the State Committee who pass on the best of the six papers, the winner in this instance to receive the medal. The following Fellows have been awarded this medal:

1928—Dr. Paul Pressly McCain ..... Sanatorium
"The Diagnosis and Significance of Juvenile Tuberculosis"
(From Section on Pediatrics)

1929—Dr. A. B. Holmes ..... Fairmont
"The Treatment of Uremia"
(From Section on Chemistry, Materia Medica and Therapeutics)

1930—Dr. C. T. Smith and Dr. W. Bernard Kinlaw ..... Rocky Mount
"The Clinical Consideration of Anemia of Pregnancy and of Puerperium"
(From Section on Practice of Medicine)

1931—Dr. F. C. Smith ..... Charlotte
"Practical Value of Perimentry in Intracranial Conditions; Case Reports" (tumors, vascular disease, toxemia, syphlis and trauma)
(From Section on Eye, Ear, Nose and Throat)

1932—Dr. Charles I. Allen ..... Wadesboro
"An Improved Splint for Treating Fractures of the Lower Extremity Showing Reduction and Skeletal Distraction Attachments"
(From Section on Surgery)

1933—Dr. H. F. Sloan ..... Charlotte
"Some General Remarks about Cataract Surgery, with report of 100 consecutive uncomplicated Cataract Operations"
(From Section on Ophthalmology and OtoLaryngology)

Dr. J. R. Adams ..... Charlotte
"Hypo-glycaemia in Children"
(From Section on Pediatrics)

1934—Dr. Fred E. Motley ..... Charlotte
"Complications of Mastoiditis with Special Reference to Septicemia"
(From Section on Ophthalmology and OtoLaryngology)

1935—Dr. Arthur H. London ..... Durham
"The Composition of an Average Pediatrics Practice"
(From Section on Pediatrics)

1936—Dr. V. K. Hart ..... Charlotte
"Etiological And Therapeutic Aspects of Bronchiectasis With Clinical Observations On Bronchial Lavage By The Stitt Method"
(From Section on Ophthalmology and OtoLaryngology)

OFFICERS, 1937-1938

OFFICERS, 1936-1937

President—Dr. C. F. Strosnider ..... Goldsboro
President-elect—Dr. Wingate M. Johnson ..... Winston-Salem
First Vice-President—Dr. C. A. Woodard ..... Wilson
Second Vice-President—Dr. John F. Brownsberger ..... Fletcher
Secretary-Treasurer—Dr. L. B. McBrayer, 1936-1937 ..... Southern Pines

OFFICERS, 1937-1938

President—Dr. Wingate M. Johnson ..... Winston-Salem
President-elect—Dr. J. Buren Sidbury ..... Wilmington
First Vice-President—Dr. R. B. McKnight ..... Charlotte
Second Vice-President—Dr. J. F. Abel ..... Waynesville
Secretary-Treasurer—Dr. T. W. M. Long, 1937-1940 ..... Ronoake Rapids
Honorary Secretary for Life—Dr. L. B. McBrayer ..... Southern Pines

COUNCILLORS, 1937-1940

First District—Dr. H. D. Walker ..... Elizabeth City
Second District—Dr. Paul F. Whitaker ..... Kinston
Third District—Dr. W. Houston Moore ..... Wilmington
Fourth District—Dr. G. W. Mitchell ..... Wilson
Fifth District—Dr. W. D. James ..... Hamlet
Sixth District—Dr. George L. Carrington ..... Burlington
Seventh District—Dr. B. H. Kendall ..... Shelby
Eighth District—Dr. R. C. Mitchell ..... Mount Airy
Ninth District—Dr. J. R. Terry ..... Lexington
Tenth District—Dr. Julian Moore ..... Asheville

CHAIRMEN OF SECTIONS, 1937-1938

Public Health and Education—Dr. Roy Norton ..... Raleigh
Surgery—Dr. Julian Moore ..... Asheville
Ophthalmology and OtoLaryngology—Dr. A. C. McCall ..... Asheville
Gynecology and Obstetrics—Dr. Bayard Carter ..... Durham
Pediatrics—Dr. Kenneth C. Geddie ..... High Point
Practice of Medicine—Dr. Coite L. Sherrill ..... Statesville
General Practice of Medicine and Surgery—Dr. W. J. Lackey ..... Fallston

DELEGATES TO AMERICAN MEDICAL ASSOCIATION

Dr. John Q. Myers (1937-38) ..... Charlotte
Dr. M. L. Stevens (1938-39) ..... Asheville
Dr. James G. Pate, Alternate ..... Gibson
Dr. W. T. Rainey, Alternate ..... Fayetteville

DELEGATES TO MEDICAL SOCIETY OF VIRGINIA

Dr. F. H. Garriss ..... Lewiston
Dr. W. G. Suiter ..... Weldon
Dr. B. M. Nicholson ..... Enfield
Dr. Paul F. Whitaker ..... Kinston

DELEGATES TO SOUTH CAROLINA MEDICAL SOCIETY

Dr. J. A. Elliott ..... Charlotte
Dr. L. T. Buchanan ..... Laurinburg
Dr. J. Buren Sidbury ..... Wilmington

COMMITTEES

Medical Society Foundation

Dr. John Q. Myers (4 years) ..... Charlotte
Dr. W. S. Rankin (3 years) ..... Charlotte
Dr. L. C. Skinner (2 years) ..... Greenville
Dr. C. C. Orr (1 year) ..... Asheville

Obituaries

Dr. Fred R. Taylor, *Chairman* ..... High Point
Dr. J. P. Matheson ..... Charlotte

Legislation

Dr. Hubert B. Haywood, *Chairman* ..... Raleigh
Dr. H. A. Newell ..... Henderson
Dr. J. S. Gaul ..... Charlotte

Moore County Medical Society Medal

Dr. J. S. Milliken, *Chairman* ..... Southern Pines
Dr. Thurman D. Kitchin ..... Wake Forest
Dr. I. H. Manning ..... Chapel Hill

Hospitals

Dr. J. W. Gibbon ..... Charlotte
Dr. W. I. Wooten ..... Greenville
Dr. T. V. Goode ..... Statesville

Cancer

Dr. H. B. Ivey, *Chairman* ..... Goldsboro
Dr. C. C. Carpenter ..... Wake Forest
Dr. Thos. L. Lee ..... Kinston

Public Relations

Dr. D. W. Holt, *Chairman* ..... Greensboro
Dr. T. W. M. Long ..... Ronoake Rapids
Dr. P. P. McCain ..... Sanatorium

Advisory to Industrial Commission

Dr. Donnel B. Cobb, *Chairman* ..... Goldsboro
Dr. Battle A. Hocutt ..... Clayton
Dr. Frank C. Smith ..... Charlotte

Finance

Dr. Vance P. Peery, *Chairman* ..... Kinston
Dr. G. Westbrook Murphy ..... Asheville
Dr. W. M. Coppridge ..... Durham

Printing

Dr. T. W. M. Long, *Chairman* ..... Ronoake Rapids
Dr. B. C. Willis ..... Rocky Mount
Dr. E. C. Judd ..... Raleigh

Post-Graduate Medical Study

Dr. C. L. Sherrill, *Chairman* ..... Statesville
Dr. James W. Vernon ..... Morganton
Dr Paul W. Ringer ..... Asheville

Member Advisory Committee on Maternity and Infancy for the Children's Bureau

Dr. W. C. Davison ..... Durham

Syphilis Control

Dr. J. C. Knox, *Chairman* ..... Raleigh
Dr. Louis C. Skinner ..... Greenville
Dr. Hamilton W. McKay ..... Charlotte

Social Security Act

Dr. Wingate M. Johnson, *Chairman* ..... Winston-Salem
Dr. L. B. McBrayer, *Secretary* ..... Southern Pines
Dr Paul W. Ringer ..... Asheville
Dr. W. C. Bostic ..... Forest City
Dr. T. G. Upchurch ..... Smithfield
Dr. Benj. J. Lawrence ..... Raleigh
Dr. Paul F. Whitaker ..... Kinston
Dr. M. P. Whichard ..... Edenton
Dr. Forest M. Houser ..... Cherryville
Dr. D. W. Holt ..... Greensboro
Dr. Geo. L. Carrington ..... Burlington
Dr. Thos. L. Carter ..... Gatesville

To Study Four Year Medical School

Dr. C. F. Strosnider, *Permanent Chairman* ..... Goldsboro
Dr. Benj. J. Lawrence ..... Raleigh
Dr. James W. Vernon ..... Morganton
Dr. K. B. Pace ..... Greenville
Dr. L. B. McBrayer ..... Southern Pines
Dr. Hubert B. Haywood ..... Raleigh
Dr. W. D. James ..... Hamlet
Dr. C. C. Carpenter, *Dean of Wake Forest Medical School* ..... Wake Forest
Dr. C. S. Mangum, *Dean, Medical School University of North Carolina* ..... Chapel Hill

BOARD OF MEDICAL EXAMINERS FOR NURSES

Miss Josephine Kerr, R.N., *President* ..... Charlotte
Miss Bessie M. Chapman, R.N., *Secretary-Treasurer and Education Director* ..... Raleigh
Dr. B. C. Willis (From Hospital Association) ..... Rocky Mount
Dr. H. A. Newell (From Medical Society 1936-1938) ..... Henderson

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA
1932-1938

Dr. Hamilton W. McKay, *President* ..... Charlotte
Dr. Benj. J. Lawrence, *Secretary* ..... Raleigh
Dr. F. Webb Griffith ..... Asheville
Dr. Ben. F. Royal ..... Morehead City
Dr. Wm. H. Smith ..... Goldsboro
Dr. James W. Vernon ..... Morganton
Dr. Roscoe D. McMillan ..... Red Springs

ARRANGEMENTS

Dr. T. W. M. Long, *Chairman* ..... Southern Pines
Place of Meeting ..... Pinehurst
Date ..... May 2, 3, 4, 1938
Headquarters ..... The Carolina

PROGRAM OF GENERAL SESSIONS

FIRST GENERAL SESSION

TUESDAY, MAY 4, 9:30 A. M.
(Ball Room)

1. Call to Order, Paul A. Yoder, M.D., Chairman, Committee on Arrangements.
2. Announcements, Paul A. Yoder, M.D.
3. Presentation of the President, C. F. Strosnider, M.D., Goldsboro.
4. President's Address, C. F. Strosnider, M.D., Goldsboro.
5. Presentation President's Jewel to C. F. Strosnider, M.D., by President-elect, Wingate M. Johnson, M.D., Winston-Salem.
6. Report of Committee on Award of Moore County Medical Society Medal for Best Paper read at 1936 Session and Presentation of Medal—
   W. C. Mudgett, M. D., Southern Pines
   Deryl Hart, M.D., Durham
   Wm. deB. MacNider, M.D., Chapel Hill
7. Report Obituary Committee
   J. F. Abel, M.D., Waynesville
   J. P. Matheson, M.D., Charlotte
8. Address (Guest Speaker) Arthur M. Shipley, M.D., Professor of Surgery, University of Maryland, Baltimore, Maryland. "The Biliary Duct Apparatus as a Surgical Problem."
9. Long, R. H., M.D., Morganton, from North Carolina Neuropsychiatric Society—"The Psychotic Aspect of Syphilis."
10. Carter, Bayard, M.D., Durham—"Preventive Medicine in Relation to Maternal and Infant Mortality and Morbidity." From Section on Public Health and Education.
11. Roberson, Foy, M.D., Durham—"North Carolina Surgery—Past, Present and Future." From Section on Surgery.

SECOND GENERAL SESSION

WEDNESDAY, MAY 5TH, 9:00 A. M.
(Ball Room)

1. Thomas, C. D., M.D., Sanatorium; Denholm, J. S., M.D., Sanatorium—"The Use of the Fluoroscope in the Diagnosis of Pulmonary Tuberculosis." From Section on Practice of Medicine.
2. Lilly, J. M., M.D., Fayetteville—"The Exogenous Toxic Amblyopias." From Section on Ophthalmology and OtoLaryngology.
3. Ferguson, Robert Thrift, M.D., Charlotte—"Chorio-Epithelioma of the Uterus." From Section on Gynecology and Obstetrics.
4. Reynolds, Carl V., M.D., State Health Officer, Raleigh—"Syphilis and its Control in North Carolina."

11:45 a.m.—Election two members State Board of Health.

12:00 m. —Conjoint Session of the Medical Society of the State of North Carolina and the State Board of Health.

MEMBERS OF THE NORTH CAROLINA STATE BOARD OF HEALTH

S. D. Craig, M.D., President, Winston-Salem
J. N. Johnson, D.D.S., Vice-President, Goldsboro
G. G. Dixon, M.D., Ayden
H. Lee Large, M.D., Rocky Mount
H. G. Baity, Sc.D., Chapel Hill
W. T. Rainey, M.D., Fayetteville
Hubert B. Haywood, M.D., Raleigh
James P. Stowe, Ph.G., Charlotte
J. LaBruce Ward, M.D., Asheville

EXECUTIVE STAFF

Carl V. Reynolds, M.D., Secretary and State Health Officer.

G. M. Cooper, M.D., Assistant State Health Officer and Director Division of Health Education, Crippled Children's Work, and Maternal and Child Health Service.

Warren H. Booker, C.E., Director Division of Sanitary Engineering and Malaria Control.

Ernest A. Branch, D.D.S., Director Division of Oral Hygiene.

John H. Hamilton, M.D., Director Division of Laboratories.

J. C. Knox, M.D., Director Division of Epidemiology and Venereal Disease Control.

R. T. Stimson, M.D., Director Division of Vital Statistics.

R. E. Fox, M.D., Director Division of County Health Work.

H. F. Easom, M.D., Director Division Industrial Hygiene.

THIRD GENERAL SESSION

WEDNESDAY, MAY 5, 5:00 P. M.

(Private Dining Room, Mezzanine floor)

1. Report of the House of Delegates.
2. Unfinished business.
3. New Business.
4. Installation President, Wingate M. Johnson, M.D., and President-elect by retiring President, C. F. Strosnider, M.D.
5. Remarks by the President and President-elect.
6. Adjourn sine die.

SECTION MEETINGS

SECTION ON OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY

TUESDAY, MAY 4, 2:00 P.M.

(Club Room)

FRANK SMITH, M.D., Charlotte, *Chairman*
ALVIN C. MCCALL, M.D., Asheville, *Secretary*

1. SMITH, FRANK C., M.D., Charlotte (Chairman's Address).

2. NEBLETT, H. C., M.D., Charlotte—"Congenital Dacryocystitis." Discussion opened by J. G. Johnston, M.D., Charlotte; C. L. Crump, M.D., Hickory.

3. GREENE, JOSEPH B., M.D., Asheville—"Some Remarks on Tonsillectomies." Discussion opened by Thomas W. Davis, M.D., Winston-Salem; Vance P. Peery, M.D., Kinston.

4. ANDERSON, W. BANKS, M.D., Durham—"Orbital Tumors." Discussion opened by V. M. Hicks, M.D., Raleigh; Chas. W. Banner, M.D., Greensboro.

5. GRIFFITH, L. M., M.D., Asheville—"Conservation in the Treatment of Sinuses." Discussion opened by H. C. Shirley, M.D., Charlotte; W. E. Brackett, M.D., Hendersonville.

Invited Guest: ALGERNON B. REESE, M.D., New York City—"The Operative Treatment of Primary Glaucoma."

A lantern slide demonstration and discussion of

1. The changes occurring in the anterior sector of the eye in cases of primary glaucoma which have a bearing on the choice of operation. In the light of these changes the indication for the different operation will be discussed:
2. Specimens on which the iridectomy, the LaGrange, the trephine and iridotasis have been performed. This will consist of a critical discussion from the standpoint of operative technique.

6. LILLY, J. M., M.D., Fayetteville—"The Exogenous Toxic Amblyopias." Before Second General Session, May 5th.

SECTION ON GYNECOLOGY AND OBSTETRICS

TUESDAY, MAY 4, 2:00 P.M.

(Ball Room)

W. Z. BRADFORD, M.D., F.A.C.S., Charlotte, *Chairman*

1. JOHNSON, GEORGE, M.D., Wilmington—"Asphyxia of the Newborn." Discussion opened by R. B. Dunn, M.D., Greensboro, and T. Leslie Lee, M.D., Kinston.

2. HAMBLEN, E. C., M.D., Durham—"Endocrine Therapy." Discussion opened by Oren Moore, M.D., Charlotte, and Kermit Brown, M.D., Asheville.

3. SCHUMANN, EDWARD A., M.D., Professor of Obstetrics, University of Pennsylvania, Philadelphia, (Guest Speaker)—"Leaves from a Gynecologist's Notebook."

4. JOHNSON, PAUL W., M.D., Winston-Salem—"Are We Progressing in the Treatment of the First Stage of Labor?" Discussion opened by Bayard Carter, M.D., Durham, and J. C. Burwell, M.D., Greensboro.

5. Hamilton, J. H., M.D., Stimpson, R. T., M.D., Bureau of Vital Statistics, Raleigh—"A Five Year Summary of Maternal Mortality in North Carolina." Discussion opened by Robert E. Seibels, M.D., Columbia, S. C., and Ivan Proctor, M.D., Raleigh.

6. Franklin, Ernest, M.D., Charlotte—"Management of Hemorrhage in the Third Trimester of Pregnancy." Discussion opened by Robert Ruark, M.D., Raleigh, and R. W. Spicer, M.D., Winston-Salem.

7. Cooke, G. Carlyle, M.D., Winston-Salem—"The Structure of the Pelvic Floor and Its Treatment." (With motion pictures in color.) Discussion opened by Frank Sharpe, M.D., Greensboro, and John A. Watkins, M.D., Asheville.

8. Ferguson, Robert Thrift, M.D., Charlotte—"Chorio-Epithelioma of the Uterus." Before the Second General Session, May 5th.

SECTION ON PUBLIC HEALTH AND EDUCATION

TUESDAY, MAY 4, 2:00 P.M.

(Blue Room)

A. C. Bulla, M.D., Raleigh, *Chairman*

1. O. S. Goodwin, M.D., Apex—"The Relationship of a Private Practitioner to the Community He Serves." Discussion opened by Henderson Irvin, M.D., Eureka.

2. Davis, David M., M.D., Professor of Genito-Urinary Surgery, Jefferson Medical College, Philadelphia, Pennsylvania—"Syphilis and Gonorrhea as Public Health Problems." Discussion opened by Hamilton McKay, M.D., Charlotte.

3. Ferrell, John A., M.D., Director of Public Health, Division of the Rockefeller Foundation for the United States, New York City—"Experimental Approaches Under Way Toward More Efficient Public Health Administration." Discussion opened by Milton J. Rosenau, M.D., Chapel Hill.

4. Carter, Bayard, M.D., Professor of Obstetrics and Gynecology, Duke University, Durham—"Preventive Medicine in Relation to Maternal and Infant Mortality and Morbidity." Before First General Session, Tuesday, May 4th.

SECTION ON SURGERY

WEDNESDAY, MAY 5, 2:00 P.M.

(Ball Room)

J. D. Highsmith, M.D., Fayetteville, *Chairman*

1. Wall, Roscoe L., M.D., Winston-Salem—"Twenty Years Progress in Anesthesia." Discussion opened by J. C. Montgomery, M.D., Charlotte; Arthur C. Ambler, M.D., Asheville.

2. Brenizer, Addison G., M.D., Charlotte—"Harelip and Cleft Palate to Date." Discussion opened by James W. Gibbon, M.D., Charlotte.

3. Reeves, Robert J., M.D., Durham—"The Place of Irradiation in the Treatment of Pituitary Adenomas." Discussion opened by Deryl Hart, M.D., Durham, surgical aspect; Dr. Fred Hanes, Durham, medical aspect.

4. Shallow, Thomas A., M.D., Philadelphia, Pa.—"The Surgical Approach to Foreign Bodies in the Gastrointestinal Tract."

5. Battle, N. P., M.D., Rocky Mount—"Traumatic Injuries of the Head." Discussion opened by Roy McKnight, M.D., Charlotte.

6. Coppridge, W. M., M.D., Durham—"The Treatment of Urinary Infections." Discussion opened by Claude Squires, M.D., Charlotte.

7. Ramsey, Graham, M.D., Washington—"Chronic Duodenal Obstruction." Discussion opened by Robt. Hackler, M.D., Washington.

8. Roberson, Foy, M.D., Durham—"North Carolina Surgery—Past, Present and Future." Before First General Session, Tuesday, May 4.

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, MAY 5, 2:00 P.M.

(Club Room)

George Mitchell, M.D., Wilson, *Chairman*

1. McMillan, Elbert A., M.D., Winston-Salem—"Psyconeurosis."

2. Hardin, R. H., M.D., Banners Elk—"Milk Sickness."

3. Turrentine, Kilby P., M.D., Kinston—"The Clinical Application of Certain Procedures in the Diagnosis and Management of Allergic Cases."

4. Holmes, A. B., M.D., Fairmont—"Malignant Hypertension."

5. Smith, David T., M.D., Durham—"The Use of Liver Extracts in the Treatment of Pellagra." Discussion opened by Julian M. Ruffin, M.D., Durham.

6. Sharp, O. L., M.D., Greensboro—"The Interpretation and Clinical Application of Electrocardiograms."

7. Thomas, C. D., M.D., Sanatorium—"The Use of the Fluoroscope in the Diagnosis of Pulmonary Tuberculosis." Before Second General Session, Wednesday, May 5th.

SECTION ON PEDIATRICS

WEDNESDAY, MAY 5, 2:00 P.M.

(Blue Room)

Arthur H. London, Jr., M.D., Durham, *Chairman*

ROUND-TABLE DISCUSSION ON THE NEW BORN

1. Hunter, W. Myers, M.D., Charlotte—"Cyanosis in the New Born."

2. Ravenel, S. F., M.D., Greensboro—"Infections in the New Born."

3. Butler, Leroy J., M.D., Winston-Salem—"Prematurity."

4. Sidbury, J. Buren, M.D., Wilmington—"Intracranial Hemorrhage."

5. Ross, R. A., M.D., Durham—"Obstetrical Causes of Neo-natal Mortality."

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

OFFICERS

President—Mrs. J. R. Terry ..... Lexington
President-elect—Mrs. W. T. Rainey ..... Fayetteville
First Vice-President and Chairman of Organization—Mrs. C. P. Eldridge ..... Raleigh
Second Vice-President and Chairman of Bed—Mrs. J. B. Sidbury ..... Wilmington
Third Vice-President and Chairman of Loan Fund—Mrs. Roscoe McMillan ..... Red Springs
Chairman of Past Presidents—Mrs. P. P. McCain ..... Sanatorium
Corresponding Secretary—Mrs. J. R. Hege ..... Winston-Salem
Recording Secretary—Mrs. E. C. Judd ..... Raleigh
Treasurer—Mrs. Fred R. Taylor ..... High Point

COUNCILLORS

First District—Mrs. T. L. Carter ..... Gatesville
Second District—Mrs. E. B. Beasely ..... Fountain
Third District—Mrs. G. B. Barefoot ..... Wilmington
Fourth District—Mrs. C. F. Strosnider ..... Goldsboro
Fifth District—Mrs. R. A. Mattheson ..... Raeford
Sixth District—Mrs. Sidney Smith ..... Raleigh
Seventh District—Mrs. F. M. Houser ..... Cherryville
Eighth District—Mrs. W. P. Knight ..... Greensboro
Ninth District—Mrs. C. R. Hedrick ..... Lenoir
Tenth District—Mrs. W. C. Johnson ..... Canton

STANDING COMMITTEES

Public Relations—Mrs. J. D. Robinson ..... Wallace
Hygeia—Mrs. P. A. Yoder ..... Winston-Salem
Historian—Mrs. Erick Bell ..... Wilson
Scrap Book—Mrs. C. D. Thomas ..... Sanatorium
Jane Todd Crawford—Mrs. R. S. McGeachy ..... Weldon
Memorial—Mrs. I. H. Manning ..... Chapel Hill
Research—Mrs. G. M. Cooper ..... Raleigh

MONDAY, MAY 3

Guests of the convention may visit the Reynolds Tobacco Factory (Camels) at any time during their stay in Winston-Salem. Passes will be secured for them on request of Ladies Entertainment Committee.

8:30 p. m.—Cootie Party—Roof Garden.

TUESDAY, MAY 4

9:30 a. m.—Opening Session, State Medical Society.
President's Address, Dr. C. F. Strosnider, Goldsboro.
Presentation President's Jewel by the President-elect, Dr. Wingate M. Johnson, Winston-Salem.
(Ball Room.)

10:00 a. m.—Executive Board Meeting (Roof Garden).

11:00 a. m.—Auxiliary Meeting (Roof Garden).

4:00 p. m.—Tea—Salem College.

9:00 p. m.—President's Reception and Fifteenth Annual Medical Society Ball.
(Ball Room.)

WEDNESDAY, MAY 5

11:00 a. m.—Bridge—Forsyth Country Club.
1:00 p. m.—Luncheon.

INFORMATION FOR LADIES

1. Register at Robert E. Lee Hotel on arrival and receive badge. $1.00 registration fee for all who do not present 1936-37 membership card.
2. Wear badge to all functions and register for all entertainment on arrival.

LADIES' ENTERTAINMENT COMMITTEE

Mrs. William H. Sprunt, Jr., *Chairman*
Mrs. G. Carlyle Cooke
Mrs. S. D. Craig
Mrs. C. O. DeLaney
Mrs. J. R. Hege
Mrs. S. W. Hurdle
Mrs. Wingate M. Johnson
Mrs. O. R. Keiger
Mrs. B. B. Pool
Mrs. R. R. Simmons
Mrs. A. DeT. Valk
Mrs. Paul A. Yoder

TUESDAY, MAY 4, 11:00 A. M., ROOF GARDEN

Call to Order.....Mrs. J. R. Terry, President
Prayer..... Dr. John R. Cunningham, Pastor First Presbyterian Church
Greetings.....Mrs. Wingate M. Johnson
Response.....Mrs. James A. Keiger
Memorial Service.....Mrs. I. H. Manning

Business Session

Report of Secretary.....Mrs. E. C. Judd
Report of Treasurer.....Mrs. Fred R. Taylor
Report of Chairman of Organization.....Mrs. C. P. Eldridge
Report of Chairman of Loan Fund .....Mrs. R. D. McMillan
Report of Chairman of McCain Bed.....Mrs. J. B. Sidbury
Report from American Medical Association.....Mrs. Forest M. Houser
Greetings from the Melical Society.....Dr. C. F. Strosnider, President
Report of Standing Committees:
- Public Relations—Mrs. J. D. Robinson.....Wallace
- Hygeia—Mrs. Paul A. Yoder.....Winston-Salem
- Historian—Mrs. Erick Bell.....Wilson
- Scrap Book—Mrs. C. D. Thomas.....Sanatorium
- Jane Todd Crawford—Mrs. R. S. McGeachy.....Weldon
- Memorial—Mrs. I. H. Manning .....Chapel Hill
- Research—Mrs. G. M. Cooper..... Raleigh

Report of Courtesy Committee
Report from Nominating Committee.....Mrs. J. Buren Sidbury, Chairman
Election of Officers
Installation of Officers.....Mrs. P. P. McCain, Organizing President
Announcements.....Mrs. W. T. Rainey, Incoming President
Adjournment

Executive Board Meeting

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

Twenty-Seventh Annual Session

MONDAY, MAY 3, 1937

(Ball Room)

President—Dr. R. M. Buie, Greensboro

Secretary—Dr. A. H. Elliot, Wilmington

PROGRAM

9:00 a. m.—Registration.

9:45 a. m.—Invocation—Dr. Ralph A. Herring, Pastor First Baptist Church, Winston-Salem.

10:00 a. m.—President's Address—Dr. R. M. Buie, Greensboro.

10:30 a. m.—"Diphtheria"—Dr. C. N. Sisk, Health Officer, Waynesville. Discussion opened by Dr. J. C. Knox, State Board of Health, Raleigh.

11:00 a. m.—"An Administrative Public Health Problem"—Dr. C. C. Hudson, City Health Officer, Greensboro. Discussion opened by Dr. R. E. Fox, State Board of Health, Raleigh.

11:30 a. m.—"Program Planning in the Local Health Department"—Dr. Roy Norton, State Board of Health, Raleigh. Discussion opened by Dr. G. L. Rea, City Health Officer, Charlotte.

12:00 m. —"Increasing the Usefulness of the Widal Reaction by Using "O" and "H" Antigens to Differentiate Sera from Clinical Typhoid Fever Patients and Sera of Individuals Vaccinated Against Typhoid"—Dr. Samuel R. Damon, Assistant Professor of Bacteriology, Johns Hopkins University School of Hygiene and Public Health, Baltimore, Md.

12:20 p. m.—Resolutions and Appointment of Committees.

Noon Recess

2:30 p. m.—"Place of the Public Health Nurse in the Modern Health Movement"—Miss Virginia Jones, Assistant Director, National Organization for Public Health Nursing, New York City. Discussion opened by J. H. Epperson, County Health Officer, Durham.

3:00 p. m.—"Follow-up Material in Mouth Health Education"—Dr. Ernest Branch, State Board of Health, Raleigh.

3:30 p. m.—"Is Maternal Welfare a Public Health Responsibility?"—Dr. W. Z. Bradford, Charlotte. Discussion opened by Dr. G. M. Cooper, State Board of Health, Raleigh.

4:00 p. m.—"Health Work in the Schools"—Dr. J. P. Davis, School Physician, Winston-Salem. Discussion opened by Dr. N. Thomas Ennett, Greenville.

4:30 p. m.—"Getting Maximum Sanitary Service for Your County"—Warren H. Booker, C.E., State Board of Health, Raleigh.

5:00 p. m.—Report of Committees. Announcements.

Evening Session

6:30 p. m.—Dinner Meeting. "Serendipity"—Dr. M. J. Rosenau, Chapel Hill.
Old Business.
New Business.
Election of Officers.

TRANSACTIONS

OF THE

EIGHTY-FOURTH ANNUAL MEETING

OF THE

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

WINSTON-SALEM, MAY 3, 4, 5, 1937

SESSIONS OF THE HOUSE OF DELEGATES

MONDAY EVENING SESSION

MAY 3, 1937

The House of Delegates of the Medical Society of the State of North Carolina convened at eight-thirty o'clock, in the Ball Room, Hotel Robert E. Lee, Winston-Salem, North Carolina, Dr. C. F. Strosnider, President of the Society, presiding.

PRESIDENT STROSNIDER: The House of Delegates of the 84th meeting of the Medical Society of North Carolina will come to order.

The first order of business is the calling of the roll.

. . . Secretary Long called the roll as follows:

Alamance-Caswell ..... Dr. George L. Carrington
Anson ..... Dr. Charles I. Allen
Avery .....
Beaufort .....
Bertie ..... Dr. F. H. Garris
Bladen .....
Brunswick .....
Buncombe ..... Dr. A. C. McCall, Dr. Julian A. Moore, Dr. R. A. White
Dr. H. S. Clark, Dr. W. R. Johnson
Burke ..... Dr. J. W. Vernon
Cabarrus ..... Dr. Julian Busby
Caldwell ..... Dr. C. R. Hedrick
Carteret ..... Dr. B. F. Royal
Catawba .....
Chatham .....
Cherokee .....
Chowan-Perquimans .....
Cleveland ..... Dr. B. H. Kendall
Columbus .....
Craven ..... Dr. J. S. Henderson
Cumberland ..... Dr. J. F. Highsmith
Currituck .....

Davidson ..... Dr. J. R. Terry
Davie .....
Duplin .....
Durham-Orange ..... Dr. W. B. McCutcheon, Dr. Wm. M. Coppridge, Dr. A. H. Powell
Edgecombe-Nash ..... Dr. B. C. Willis, Dr. J. A. Winstead
Forsyth ..... Dr. J. B. Whittington, Dr. V. M. Long, Dr. S. W. Hurdle
Franklin ..... Dr. R. F. Yarborough
Gaston ..... Dr. McT. G. Anders
Gates .....
Granville ..... Dr. R. L. Noblin
Greene ..... Dr. J. H. Harper
Guilford ..... Dr. I. Thurman Mann, Dr. R. A. Schoonover, Dr. O. B. Bonner, Dr. D. W. Holt
Halifax ..... Dr. R. S. McGeachy
Harnett ..... Dr. Fred S. Fleming
Haywood ..... Dr. J. F. Abel
Henderson ..... Dr. J. S. Brown, Jr.
Hertford ..... Dr. T. J. Faison
Hoke ..... Dr. J. H. Williams, Dr. P. P. McCain
Hyde .....
Iredell-Alexander ..... Dr. R. S. McElwee, Dr. T. V. Goode
Jackson .....
Johnston ..... Dr. B. A. Hocutt, Dr. S. A. Duncan
Jones .....
Lee ..... Dr. Waylon Blue
Lenoir ..... Dr. Mike Lee
Lincoln ..... Dr. W. G. Bandy
McDowell ..... Dr. L. L. Williams
Macon-Clay .....
Madison .....
Martin-Washington-Tyrell ..... Dr. W. F. Evans
Mecklenburg ..... Dr. R. B. McKnight, Dr. J. S. Gaul, Dr. J. A. Elliott, Dr. R. F. Leinbach, Dr. Oren Moore
Mitchell ..... Dr. C. A. Peterson
Montgomery .....
Moore ..... Dr. W. C. Mudgett
New Hanover ..... Dr. W. Houston Moore, Dr. J. F. Robertson
Northampton .....
Onslow .....
Pamlico .....
Pasquotank-Camden-Currituck-Dare ..... Dr. Claude B. Williams, Dr. H. D. Walter
Pender .....
Person ..... Dr. S. V. Lewis
Pitt ..... Dr. G. G. Dixon
Polk .....
Randolph ..... Dr. R. P. Sykes
Richmond ..... Dr. W. D. James
Robeson ..... Dr. T. C. Johnson
Rockingham ..... Dr. Carl V. Tyner
Rowan ..... Dr. H. L. Monk
Rutherford .....
Sampson ..... Dr. W. P. Starling
Scotland ..... Dr. E. A. Livingston, Dr. M. B. Wilkes

Stanly .....
Stokes .....
Surry-Yadkin .....Dr. R. J. Sikes
Swain .....Dr. Z. P. Mitchell
Transylvania .....
Union .....
Vance .....Dr. H. A. Newell
Wake .....Dr. I. M. Proctor, Dr. M. D. Hill, Dr. R. R. Weathers, Dr. H. M. Vann
Warren .....
Watauga-Ashe.....
Wayne .....Dr. Wm. H. Smith, Dr. C. H. Rand
Wilkes-Alleghany .....Dr. James H. McNeill
Wilson .....Dr. George W. Mitchell
Yancey .....

SECRETARY LONG: Have any delegates come in since their counties were called?

Mr. President, I called the roll of counties and there is a quorum present.

PRESIDENT STROSNIDER: Gentlemen, I wish to announce that tomorrow evening at six o'clock there will be a testimonial dinner given on the roof on behalf of our Secretary-Treasurer Emeritus. All ladies, wives and sweethearts, are invited to come with their husbands. There have been quite a number of men who have asked if the ladies would be welcomed. We welcome them. We will be delighted to have them. The dinner will be held on the Roof Garden.

Gentlemen, I couldn't write down all of the things that have taken place during the past twelve months. The day of static, the day of quiescence and the day of all peace and harmony apparently has gone for the physician, the same as it has for most other folks. There is something going on all the time. There is always something taking place, something which interests every man, woman and child. Health is endangered. Through the medium of illness, or through the medium of exposure, danger threatens the state. Our profession is called upon. Many dangers are threatening our state and nation, and have been for some years. Likewise, many dangers are threatening our profession. So those of us whom you have clothed with the responsibility of taking care of your business this year have had a year of activity, as will the men who succeed us have a year or years of activity.

The medical profession being a professional science is a thing of progress. Progressive things are presenting themselves for solution and application. So, therefore, those of us who were chosen as your servants this year will now proceed to give an accounting of our stewardship as best we may.

. . . President Strosnider then presented his prepared paper, making the following interpolations:

(1) preceding the words, "3. County Secretary and President conference," on page 7: And I want to say here, by the way, gentlemen, if you

have not attended one of these courses you have been the loser. The courses which have been put on at Goldsboro and Raleigh have been outstanding, and I trust the University will continue the good work.

(2) preceding the words, "4. That the Social Security Committee be continued," on page 8: My reason for making that recommendation is that usually the youngest man in the Society is elected as secretary. The office of secretary of your local Society is a very important one, and I feel if the men have a round table discussion and are properly instructed it will mean much for our profession in the years to come.

. . . President Strosnider then completed the presentation of his paper. . . . (Applause)

MESSAGE TO THE HOUSE OF DELEGATES

Members of the House of Delegates:

The Presidency of the Medical Society of the State of North Carolina is an honor which is appreciated more deeply by me than any other that it has been my good fortune to receive. I am most grateful for your confidence in extending to me the privilege and the opportunity for service to the profession which I love.

Your Society has grown not only numerically but in service to you and the public which looks to us in time of family or community need. This growth has been due not only to the assistance which each of you has given so freely when called upon, but also and more especially to the tireless efforts of Dr. L. B. McBrayer, Honorary Secretary-Treasurer for life, and the members of your Executive Committee. We have not solved all the problems confronting our Society. The size and complexity of the problems to be considered during the coming year are greater than those of the past year, and they can only be met through your continued coöperation and assistance to those whom you choose to serve.

With the desire to keep you well informed regarding the problems of the present year, I visited many of the District and County Medical societies and it is with a feeling of pride that I can report to you gentlemen that the meetings have been harmonious, the programs of a high order; and, what to me is of more importance, the papers have been generally discussed by those present. Another interesting feature of the meetings is that the attendance has greatly increased in recent years. This can be accounted for, in my opinion, by reason of the fact that the doctor is at last realizing that he can accomplish more for the community, which he serves, and the profession of which he is a member, if he is well informed as to what is going on in the State and Nation, generally, and medicine in particular.

The Medical Society should and must be kept well informed as to what is going on in our State and Nation, especially as it pertains to the practice of medicine, surgery and public health. How can this be

done? Through the important office of the Councilor of each District attending every meeting, possible, of the State Executive Committee of the Society; by letters addressed to the Secretaries and Presidents of the medical societies by the President and Secretary-Treasurer of the Medical Society of the State of North Carolina. When matters of importance to the members of the profession have been discussed and a policy has been adopted by the State Executive Committee, the Councilor should write the Secretary of the County medical societies of his district for an appointment to attend the next meeting when such matters can be brought to the attention of the membership of such societies. With a program of this, or similar nature, the profession can be kept in close touch with what is going on in both State and Nation, from a medical standpoint. The Councilor being the representative of the President of this Society in his district, makes this office an important one. Therefore, those of us accepting the office of Councilor should be prepared to sacrifice time and energy in the behalf of our profession and the good of the public. The responsibility of the Councilor of the past has been great; but, as I vision the future, the activities of the Councilor will be greater if organized medicine is to be kept well informed on the matters pressing for solution.

Gentlemen, my impression is that if the State Medical Society is to retain its independence and the control of the practice of medicine in our state, our members must not only be politically alert, but we must take a more active part in informing ourselves on all matters pertaining to the disadvantages of the socialized practice of medicine in this and other countries. We must be prepared to meet our National and State legislatures with a plan suitable to the needs of our day and generation.

The idea of preparation is timely for the reason that the Social Security Board is now investigating the cost and workings of systems of Health Insurance in certain foreign countries. In this connection, it will interest you to know that on January 15, 1937, Senator Capper, of Kansas, introduced into the United States Senate, Senate Bill No. 855, entitled "To Aid in Alleviating loss Caused by Sickness—State Systems of Health Insurance." This bill was read twice and then referred to the Senate Finance Committee. What shall our attitude be when, and if, we are consulted? Will it suffice for us to concentrate upon a defensive position, only? I say no, for the reason that a positive position is always better than that of a negative or defensive attitude. Shall we content ourselves only with efforts to defeat Compulsory Health Insurance because we know its short-comings? Would it not be better for us to formulate a positive program and concentrate our best efforts to devise some plan or scheme which, while obviating and avoiding all the disadvantages inherent in Compulsory Health Insurance, would yet be along lines which without sacrifice of intellectual honesty and accepted high principles of service, we could honorably support.

Your State Executive Committee, recently, approved my recommendation that a committee known as the Social Security Committee be appointed to study plans, ways and means to formulate such a scheme or plan as would best meet the proposals of Senate Bill No. 855.

This committee has been appointed and the members thereof are now engaged in the work assigned to them.

Your Executive Committee has been called into session three times during my administration to pass upon matters pertaining to the business of the Society. These meetings will be reported to you in the minutes of the Executive Committee. On the behalf of the Society, I take this occasion to thank the members of the Executive Committee for their attendance, interest and coöperation in conducting the business affairs of this Society. They have been generous in giving their time in serving on the various committees, as well as the many other duties of the Executive Committee. Gentlemen you have served well the interest of the public and organized medicine in North Carolina.

All of our committees have carried on the work assigned to them with interest and efficiency. Two of these committees have performed outstanding work for the profession this year; namely, the Committee for the Control of Syphilis and the Legislative Committee.

Dr. Parran, Surgeon General of the United States Public Health Service, requested me to appoint a committee to study the syphilis problem in our State and to make recommendations to him as to how it could be best reported, diagnosed, treated, etc. I appointed the following doctors to serve on this committee: Dr. John C. Knox, Chairman, Raleigh; Dr. L. C. Skinner, Greenville; Dr. Hamilton McKay, Charlotte.

This committee met promptly after its appointment, compiled its report and forwarded the same to Dr. Parran who complimented the judgment of this committee by adopting many of their recommendations to his national program for syphilis control. Every doctor in North Carolina should read their report as soon as he receives a copy of his 1937 TRANSACTIONS, for the reason that their report is a liberal education on the present day procedure in the reporting, diagnosing and the safe management of syphilis.

Another committee has completed an arduous year's work in dealing with an active bill passing legislature, especially during its closing days. Our Legislative Committee has made an unique record this year, not for the successful laws its advocated, but for its success in either defeating or emasculating legislation, which if enacted into law, would have been detrimental to the public welfare and our profession. The success of this committee can be attributed to several sources:

First: To an unprecedented interest in legislation, on the part of our membership.

Second: To the masterful part our present Secretary-Treasurer, Dr. T. W. M. Long, took as Senator, in informing his fellow Senators on matters pertaining to medicine and public health welfare.

Third: To the miles of walking, volumes of talking in explaining to members of the Legislature and others; and, an unlimited amount of energy expended by Chairman Ben. J. Lawrence and his fellow committee members, Drs. L. B. McBrayer, J. F. Highsmith and W. D. James. Gentlemen, we thank you from the bottom of our hearts for a duty which has been exceptionally well performed.

We have another committee which is so essential at this time to the smooth running of this organization—the Committee on Arrangements. This committee, under the guidance of Drs. Yoder, Cooke and their associates, have made ample preparations for the transaction of the business of this Society as well as the many social features in store for the membership and their wives during their stay in this beautiful city.

The Medical Society of North Carolina is fortunate to have a Host Society composed of such excellent doctors, who have a state-wide reputation for maintaining a high standard in the practice of medicine, surgery and public health and for the peace and harmony which prevails among the profession. Forsyth County Medical Society—we are here—Greetings!

I now take special pleasure in paying my respects, at this time and place, to Dr. L. B. McBrayer our Honorary Secretary-Treasurer for Life. It was my misfortune, as well as that of this Society, when he became ill in March, of this year, and was thereby prevented from concluding his active term of office. He has been of inestimable help to me, as he has been to the former Presidents of this Society over a period of twenty-one years. He has accompanied me on practically all of my visits or met me at the designated meeting place. He has been the spark plug in firing the imagination to initiate new movements and to nourish them to their fruition for the welfare of the people and our profession. The history of organized medicine in North Carolina will carry pages of accomplishments over a period of the past twenty-one years, and engraved in the hearts of the men who have assisted in making this progressive history will ever remain the memory of the man of passionate desire to be of service to the profession and the people of North Carolina—Dr. L. B. McBrayer.

The office of Secretary-Treasurer is an important one in our organization. The man filling this position should have had considerable professional experience in order that he may cope with the many situations ever presenting themselves for action. He should be the energizer of the various committees as well as the adviser to the President and keep the executive officers well informed as to the many activities affecting the practice of medicine and public health; he should be a good harmonizer; a good diplomat, and experienced in the technique of legislation. He should be well known to the profession. He should be a good executive officer with the special art of organization. With these and other desirable quali-

ties together with having had such an efficient Secretary-Treasurer as Dr. McBrayer over a period of twenty-one years, the position of Secretary-Treasurer is not easily filled.

However, your Executive Committee was most fortunate in finding a man possessing the above mentioned qualities in Dr. T. W. M. Long of Roanoke Rapids, who was elected April 5, 1937, by the Executive Committee in session at Pinehurst, to fill the unexpired term of Dr. L. B. McBrayer, as Secretary-Treasurer.

Dr. Long is eminently qualified to fill this position of trust by education, training, temperament and as a general practitioner; as a former member of our State Board of Medical Examiners; as former Chairman of the Board of Trustees of our State Tuberculosis Sanatorium; serving on various committees of this Society; as a member of the House of Representatives and as a member of the 1937 Senate. In all of these positions of trust, he has served with distinction and credit to his clients, himself and our profession.

I have the following suggestions to recommend to the House of Delegates and to my successor for the coming year:

1. Continuance of Post-Graduate Assemblies.

2. Full coöperation with the University of North Carolina Extension Post-Graduate Medical Courses.

3. County Secretary and President conference in January of each year for the instructions pertaining to the duties of their offices and in the developing of key-men in each society to further the cause of organized medicine.

4. That the Social Security Committee be continued to prepare a plan covering the medical and surgical care of our sick indigent and low wage group of citizens.

5. Coöperate and encourage the Hospital Savings Association Plan.

6. The continuation of the Committee on the Control of Syphilis.

7. That the Executive Committee be elected in such a way that all do not come up for election at one time.

President Strosnider: Gentlemen, the next order of business is the reading of the minutes of the Executive Committee.

Dr. George W. Mitchell (Wilson County): I move we publish the minutes of the Executive Committee of the Society and leave it like we did last year.

Dr. C. S. Mangum (Durham County): I second the motion.

. . . The motion was put to a vote and carried. . .

MINUTES EXECUTIVE COMMITTEE
MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

GRAYSTONE INN, ROARING GAP, N. C.

July 20, 1936

The meeting of the Executive Committee was called to order by the President, Dr. C. F. Strosnider, at ten a.m., Monday, July 20, 1936, Graystone Inn, Roaring Gap, N. C.

The following were present:

President.....Dr. C. F. Strosnider
President-Elect.....Dr. Wingate M. Johnson
First Vice-President.....Dr. C. A. Woodard
Second Vice-President.....Dr. John F. Brownsberger
Secretary-Treasurer.....Dr. L. B. McBrayer

COUNCILORS

Second District.....Dr. K. B. Pace
Fourth District.....Dr. E. S. Boice
Seventh District.....Dr. Forrest M. Houser
Eighth District.....Dr. R. C. Mitchell
Ninth District.....Dr. J. R. Terry
Tenth District.....Dr. G. W. Murphy
Chairman Committee on Legislation.....Dr. Benjamin J. Lawrence
Assistant State Health Officer.....Dr. George M. Cooper
Committee on Post-Graduate Study.....Dr. R. H. Hardin
Committee on Post-Graduate Study.....Dr. C. L. Sherrill
Representing the State Hospital Association.....Dr. Moir S. Martin, Pres.
Resolution proposed for Legislation.....Dr. W. C. Bostic, Sr.
Automobile Accident Insurance

PRESIDENT STROSNIDER: Gentlemen, we will come to order hoping some of the other boys will drift in a little later. The Executive Committee has been meeting in the eastern section of the state and we thought this time it might be well for the eastern boys to come up and pay the western group a visit. I am delighted that we have selected this location for the meeting today. It is surely delightful.

We have a lengthy agenda, as you see, and we will proceed as you gentlemen see fit.

My remarks are along the following lines: (Reading)

Gentlemen, I am pleased to have the honor of serving as President of the Medical Society of the State of North Carolina this year. I count myself doubly honored to be privileged to preside over a group of picked men whom our Society has in her wisdom seen fit to select as her officers to carry on the business affairs of the society.

Positions of honor always have responsibility far outweighing the honor. Therefore, as our society has honored us with positions of trust she has also placed upon our shoulders duties and responsibilities which I am sure you gentlemen will work as one man to meet and solve the problems as they may arise. Gentlemen, we are on the lookout or the advance guard, if you please, to detect and to meet the enemies of organized medicine in North Carolina. We are the harmonizers, as it were, in our organization. Let us ever be alert to keep a smooth working organization in our state. The best way to do this is to watch for the friction in our county societies. As councilors let us request that we be notified of any trouble developing in the society or societies of our respective district.

MEDICO-LEGAL

Law suits are on the increase in our state and nation. The doctor is being victimized along with the automobile operator. The same old story, *the insurance company pays,* will have a tendency to play a part with juries as it has in the case of disability life insurance cases.

As councilors, you can be of distinct help to the doctor being sued if you are promptly notified by the secretary of the society of which the doctor being sued is a member in good standing. Then the councilors should lose no time in going to the locality and conducting an investigation, contacting the officers of the local society and the doctor being sued and finding the doctor who is going to appear as witness in the case. Then contact the doctor who is going to be a witness and use your own good judgment in convincing him that he is about to attack organized medicine and injure his fellow practitioners' reputation as well as himself. In order that our society members should have the advantage of experienced men, I believe that we should have the benefits of our past presidents as councilors at large; one for the western section, one for the middle section and one for the eastern section of our state. These men would soon become specialists, as it were, in advising our officers in the matters of law suits. We must develop a strong defense against this menace.

BUREAU OF MEDICAL ECONOMIES OF THE A. M. A.

This is a subject upon which we should be well informed.

This bureau of the A. M. A. will be glad to furnish us with valuable literature on this subject.

ATTENDANCE

May I suggest that the councilor of the districts attend at least one meeting of the county societies composing his district, make inquiries as to peace and harmony, number of members in good standing, number of doctors practicing in the county and observe if the young men are attending the meetings of the society. . . I have visited quite a number of county societies. It is most gratifying to see the young men in large numbers. It is an encouraging thing in the medical society as it is in the church to have

the young men come out and take part and to have them work actively will be of great assistance to organized medicine. Usually the youngest man in the society is made secretary. His inexperience is a handicap in that position. I attended a society meeting a few weeks ago where the young man who was secretary was greatly discouraged, in fact wished to resign, and so I went to the President after the meeting and congratulated him on the work he was doing and asked him to go to the young man and advise him in his work. That is one thing we can do that will be of great assistance to the organization. . . Suggest that a membership committee consisting of the President, Secretary, and Vice-President, solicit the men not in good standing to become thus. Give such information as the occasion demands.

To use a good Methodist phrase, you are the presiding officer of the district.

When the secretary or myself can be of service to you or your district, command us. We are all working to render the best possible service to the fellows and the people of our state.

DEVELOPING LEADERSHIP

We must prepare ourselves for the task of leading our profession out of the medical wilderness in to which we are fast approaching. It will not be done by others, the responsibility is definitely ours. Let us lose no time in making due preparations for the meeting of our coming legislature. Then diplomacy, foresight, preparation and thought-out suggestions will be worth their weight in gold to the profession and citizens of our state. Let us develop leaders in each medical society in North Carolina. It is our duty to see that each society has a working and capable legislative committee, with power to act. This authority must be obtained from the local society before the battle begins in the legislature. (The Chairman of our Legislative Committee can advise you in details as to this important matter.)

We will be kept busy in assisting our Legislative Committee in detecting bills that carry features inimical to the public and professional interest from the medical standpoint. Nothing can be taken for granted under such circumstances. At times innocently enough but not infrequently by design a clause or section of far reaching and important significance to the practice of medicine is tucked away in a bill bearing innocuous title or one that seems foreign to medical matters. Therefore, every bill that is introduced must be read critically in order to meet issues of importance in medical matters.

Compulsory Health Insurance was deleted from the Social Security Act, but we can be prepared nationally and locally for such ideas developing in the coming year.

CARE OF THE INDIGENT SICK

This has already gotten back to the counties and the county and city doctor idea will be a return issue.

I feel that we should be on the lookout for a satisfactory plan to meet this issue in the respective districts of our state. This is a matter for our Economic Committee to initiate.

The medical, dental, nursing and legal professions must be alert and militant. They must guard diligently the rights they now have and see that those elected are at least not opposed to those things which are considered to be for our good as well as the public's good. With every other group interested in politics there can be no criticism of the medical profession taking an active interest therein as long as it remains non-partisan and works in the open, using reputable and honest methods.

I feel that the future for the medical and other professions above mentioned, is to be decided in the next few years and since we know the problems and the dangers, we are the best capable of leading the laity in the proper direction. No doctor should be too busy, too old or too young to be interested in the final solution of the question and he should give his time and his ability as opportunity is afforded him, so that when the final decision is made, he can look back and truthfully say that he has fought a good fight and kept the faith.

My friends, we must be alert and fight to maintain the confidential relations between patient and physician, a fundamental principle in medical service of whatever character.

President Strosnider: Now we come to item three—Resolution by Dr. Bostic referred by House of Delegates to Executive Committee. Dr. McBrayer, will you read the resolution.

Secretary McBrayer: (Reading)

"Resolved, that the House of Delegates of the North Carolina Medical Society favor the present scale of fees for automobile license tags for North Carolina.

That fifty per cent of the cost of the licenses be used to purchase liability insurance for each and every automobile in the State. The amount of insurance to be applied first to those injured, in supplying medical attention and hospital care and the repair of damages to automobile and other property.

That this body in session furnish their respective Representatives and Senators copies of this resolution urging them to support this measure and to see that such a bill is passed at the next Legislature in 1937.

That each and every member write or wire their endorsement of this measure and in every way urge the passage of such a bill in the next Legislature.

We believe that if fifty per cent of the present license fee be used to

purchase insurance covering liabilities incurred by each and every automobile licensed by the State, that the insurance will be ample to cover at least seventy-five per cent of all the accidents that happen and perhaps more.

Each applicant for license to also have the privilege of purchasing additional amounts of insurance when desired at the same rate furnished by the State by paying an additional amount.

The State may purchase this insurance to be furnished the owners of automobiles from one or more reliable insurance companies at a very low rate, but if not able to purchase it at a very low rate then the State should create an insurance department to handle this insurance and also other insurance needed to cover other State controlled institutions, highways, employees, hospitals, schools and school buses, if desired. The said insurance department created and controlled by the State could use the funds collected to invest in North Carolina bonds and in this way create in part its own bondholders and market for same, keeping all the funds at home and at work.

To operate an automobile on the streets and highways without being financially and physically able to be responsible for at least a part of the damage that might be incurred by an owner of a car is a growing menace to society.

The owner and driver of a second-hand T-model Ford worth $50.00 with only two drinks, may rip off the side of your Buick or Packard, send you to the hospital and maybe cripple you for life or send you to the undertakers without any responsibility except perhaps a small fine or road sentence to satisfy the Court.

With this amount of group insurance at least $500.00 liability could be placed on every automobile in the State which will in a measure cover a great majority of all the accidents and damages to automobiles and personal injuries (unless very serious). More than 400,000 automobiles with an average of $5.00 premium for each automobile would be two million group premiums annually, which would make a very nice business for a State-owned and State-operated insurance department, giving insurance at a very low rate to all its institutions. All automobile owners, doctors, hospitals, nurses, garage owners, auto mechanics, supply houses and thousands of widows and orphans, and last, but sure, the undertakers should sponsor and favor such a measure, and if not—why not?

If any one in North Carolina be able to own and operate a car, if they buy a license tag they will own some liability insurance under this plan."

President Strosnider asks for suggestions as to what to do with the resolution or motion for adoption.

Finally Dr. Terry moved that the resolution go before the Executive Committee for mature discussion and consideration.

Discussion by Dr. Abel as follows: "I think, sir, that is a very far-reaching thing and as you suggest, I do not think it should be adopted or handled lightly. I do think that the proper channel, in order to keep it in a wider sense before the body—before the Medical Society of the State of North Carolina—would be to let it go through the Executive Committee, and if approved, from the Executive Committee to the Legislative Committee, with its approval, disapproval, or what-not. I believe, sir, it would be better to let it go through the Executive Committee, and keep it before the entire body, instead of confining it to a small group."

The motion was seconded and adopted.

Now, on the action of the House of Delegates, it is before the Executive Committee.

President Strosnider: This resolution is open for discussion.

Dr. McBrayer: Dr. Bostic is here now. I don't know whether he would like to be heard now or later.

Dr. Bostic: Either way.

Dr. McBrayer: Take your choice.

Dr. Bostic: I will say just a little bit. I will not read all this however. (Indicating numerous letters) I thank you very much, Mr. President, and members of the Executive Committee of the North Carolina Medical Society for the privilege of coming before you. If you will recall at the time the resolution was read in the wee, small hours of the night, we didn't have time to discuss it at the Asheville meeting and I was glad it was referred to your Committee because I feel it is one of so much importance. I feel it should be considered by your Committee first before adoption. I will not take the trouble to discuss many phases in connection with the reasons for adopting a plan of this kind. I mailed out last week copies of discussions and also copy of resolutions to each one of the Executive Committee so that they might have ample time to study it and arrive at some decision as to whether it is logical, reasonable or helpful to the medical profession of North Carolina. I wish to offer some notes here. I will merely read them. (Reads)

"Some Rules for Liability Insurance on All Automobiles in North Carolina"

1. Can anyone give a clear estimate of the tremendous loss in property damage, in loss of life and limb by the wholesale slaughter throughout our State and Nation today?

2. We can invite your attention to the part the medical profession is supposed to play in this great drama of wreck and ruin.

A. The Good Samaritan Act.

3. What is the experience of the physicians who have had a part in rendering service in automobile accident cases?

A. Would it be possible to get a measure of relief in the plan we have suggested or can we find a better one to offer the medical profession or North Carolina?

B. Also the element of danger in connection with handling of these cases such as malpractice damage suits. This is far-reaching in importance and this reason alone is worth the consideration of this plan.

4. The idea of a small amount of liability insurance on each and every automobile in the State will, I believe, go a long way in offering relief in the perplexing problem and it will not only benefit the physicians and hospitals, but will in a small measure take care of the tremendous property loss to the citizens, and especially to the widows and orphans who are left in distress.

5. This plan does not call for any increase in taxes nor increase in the present price of the automobile license tag. We believe that if enacted into law it will give a fair chance for the physicians and hospitals to collect not less than $100,000 annually or more, and at the same time give each physician a small amount of liability insurance on his own automobile.

6. Then if this be true is it worth your time and approval of the plan and a united effort of the medical profession to see that such a law, if passed at the next Legislature, when the price of the license tag will be reduced 50% or more?

A. If we fail to get liability insurance at this time it will be a long time before it will be considered again.

7. We wish to offer some of the advantages of such a plan over any other plan that we have studied. I shall mention only a few of the many.

A. $1,000 liability insurance on five hundred thousand automobiles will give the staggering figure of five hundred million dollars of protection to the people of North Carolina.

B. Each and every one will feel a sense of security in knowing that, should he injure or damage any one's property, he has at least some relief to offer.

8. I suggested that if the reliable insurance companies of our State can furnish the insurance at a reasonable rate, then to offer the insurance to them first, but I am convinced that the State can establish an insurance department for highway relief and furnish the insurance desired at less than half the price that the old line companies can offer it.

9. Here are some of the reasons:

A. No increase in taxes.

B. No costly office building.

C. No losses from bad investments.

D. No costly investigations of property.

E. No bonded officers; the State Treasurer can handle all funds.

F. No great amount of printing; the license tag can represent the policy.

G. All investments of premiums to be invested in North Carolina bonds; this will insure no loss in the way of investments.

H. Only a small claim department will be necessary to handle and adjust claims.

I. No high priced salaried soliciting agents.

J. No advertising.

K. No business to be solicited.

L. No officers' or directors' salary to be paid.

M. Most of the cases can be investigated by the highway patrol; they have to investigate them and make reports already.

N. No taxes to pay.

O. A large per cent of all claims could be settled out of court and by arbitration if possible.

10. A large amount of taxes can be saved in each county by preventing litigation started in order to collect for damages to property. Hundreds of cases can be settled without loss to the counties. This reason alone should make every taxpayer favor the plan.

11. The suggestion has been indorsed by many editors and leading doctors and hospitals. Many lawyers approved the idea. Some of the county medical societies have indorsed the plan and will support the measure in the next Legislature. Many of the candidates for the House and Senate have expressed a willingness to support the measure.

I wish to relate an experience of our prospective candidate for the House of Representatives, Mr. Grady Withrow. He was out on a campaign some time ago and he mentioned the fact that he had read my article in the *Charlotte Observer*. He was very much impressed with the idea.

I said: "I want you to favor it."

He said: "You bet, I favor it. You know I started to Charlotte about a year ago, my wife and I. A man from Shelby drove his car into mine sending me and my wife to the hospital and our hospital bill was $550, damage to the automobile $350, making a total of $900."

I said: "How much did you get?"

He said: "Not a penny."

I said: "You carried insurance didn't you?"

He said: "I carried $40.00."

He was out eight hundred dollars and he had to go to the hospital, he and his wife both.

Dr. Lawrence: He is your Representative? Is he going to support the measure?

Dr. Bostic: He is going to introduce it in the House of Representatives.

Dr. Bostic: (Resuming reasons. . .)

12. What will the North Carolina Medical Society do in regard to the matter?

A. If any one can offer a better plan that will give the relief desired, we will be glad to support such a measure."

I have a number of letters from professional men. I will quickly read one from a lawyer, Mr. Oscar J. Mooneyham of Forest City, N. C. (Reads)

Forest City, N. C.
July 14, 1936.

Dr. W. C. Bostic, Sr.
Forest City, N. C.
Dear Dr. Bostic:

I have read with a great deal of interest the resolution which you offered in the House of Delegates of the North Carolina Medical Society at Asheville, North Carolina, May 4, 1936, which resolution provides that fifty per cent of the present cost of automobile licenses be used for compulsory liability insurance, and that the present rates for automobile licenses remain the same.

From my experience and observation as a practicing attorney, this would be a very desirable piece of legislation. The use of a state highway to drive an automobile upon is not a natural right, and the State has a right to exercise its police power to make the highways safe for all people who drive thereupon. I, therefore, think that such a piece of legislation would be constitutional. It would be a due exercise by the State of its police power, and would meet the constitutional requirements.

It would be economically sound. There is a growing conviction upon the part of most of our citizens that all who are given the privilege of operating a machine like an automobile upon the state highways should be required through liability insurance to safeguard and protect others from loss through personal injury and property damage. Many of our citizens, through no fault of their own, lose thousands of dollars annually from personal injuries and property damage growing out of automobile wrecks caused by people who are financially irresponsible. This situation should certainly be remedied by sound legislation providing for compulsory liability insurance.

Since there is a popular clamor for a reduction in the prices of automobile licenses, I think this proposed legislation would meet with the universal approval upon the part of automobile owners in this State.

It would provide liability insurance without working any undue hardships upon automobile owners.

If fifty per cent of the present cost of automobile licenses did not provide as large a sum of liability insurance as some would like to have, it would at least provide a sum sufficient to pay doctor bills, property damage, and some for personal injuries. At the present time, there are

many wrecks caused by financially irresponsible drivers in which there is no money for doctor bills, hospital bills, or property damages. This works a hardship upon our hospitals and doctors, who as a class should not be called upon to bear this burden alone.

I think that your proposed legislation is not only constitutionally sound, but that it is absolutely necessary. You have my best wishes in this undertaking to which you have devoted your time and money. If I can be of any assistance in helping to secure its passage by the Legislature, please command me.

With kindest regards, I am

Very truly yours,

OJM/h OSCAR J. MOONEYHAM.

DR. BOSTIC: I have two other letters here from lawyers, but I am sure you have plenty of matters to take care of, so I shall not read them. I have a very fine letter from Mr. Hoey.

DR. LAWRENCE: What did he have to say, Dr. Bostic?

DR. BOSTIC: I asked Mr. Hoey to study the proposition but not to commit himself before the primary. This is his answer:

DR. W. C. BOSTIC, SR.
FOREST CITY, N. C.
DEAR DR. BOSTIC:

I have your fine letter of March 25, 1936, enclosing data covering some very vital subjects.

Thank you for your thoughtfulness in sending all of this. I am in hearty accord that something should be done for the protection of the public, providing some sort of compensation for those unable to become responsible for damages.

I have not yet had time to go into detailed plan suggested in the resolutions but I assure you I am heartily in sympathy with the end in view and will give my best efforts to see that something is done to meet the situation.

With sincere sentiments of esteem for the fine service you are rendering in my campaign, I am

Yours very truly,

PRESIDENT STROSNIDER: Gentlemen, the resolution is open for your discussion.

. . . Dr. Houser, President-elect Johnson, Dr. Benj. J. Lawrence, Dr. J. R. Terry, Dr. E. S. Boice, Dr. Pace, Dr. Woodard, Dr. Mitchell, Secretary McBrayer, and President Strosnider discussed the question at length. . .

The next thing on the agenda is the recommendations of President Ringer.

a. Continuance of post-graduate assemblies. The committee is here to speak to us a little later.

b. Continuance of post-graduate obstetrical courses. Dr. Cooper is here to speak to us.

c. Careful selection of candidates for the General Assembly. Too late now.

d. Adequate protest against injustice being practiced in Washington.

e. Continuance of annual dues at $10.00.

f. Continuance of Hospital Savings Association plan.

All approved by the House of Delegates and only to be passed on here.

We will hear from Dr. Cooper.

Dr. Cooper: I want to say that I consider it a high privilege to be given the opportunity to make a report on the efforts we have made in the past twelve months. I want to say also that I have never been engaged in an enterprise that has given me more genuine pleasure. I have met some disappointments. Some men whom I had every reason to expect to find profoundly interested were not. On the other hand I have been pleasantly and agreeably surprised to find interest taken by so many men that I had no particular reason to expect would be especially interested. I have written out a report more or less in detail for the secretary. (Report follows)

A Brief Report on the Post-Graduate Courses in Obstetrics Exclusively for Physicians and Provided Through the Co-operation of the North Carolina State Medical Society for Each of the Ten Councilor Districts, The U. S. Children's Bureau, and the North Carolina State Board of Health.

By G. M. Cooper, M.D., Director
Division of Preventive Medicine

Early in 1935, after learning of the post-graduate courses in obstetrics in a number of states in the South, notably Mississippi and South Carolina, which were made available by the U. S. Children's Bureau, we requested that organization to make available such a series in North Carolina, along plans to be outlined by the State Board of Health after full approval of the executive committee of the State Medical Society. Dr. Eliot, chief of the medical service of the Children's Bureau, promised this coöperation in a conference held with her early in August, 1935. The conference was held at her request, and we were instructed to take the matter up with Dr. James R. McCord, professor of obstetrics in Emory University Medical School at Atlanta, Georgia. Dr. McCord was therefore tentatively invited to conduct as many lectures as he could consent to do in the late summer and early fall of 1935, the project of course, to be approved by the State Medical Society. Dr. McBrayer, the secretary, and Dr. Ringer,

the president of the State Medical Society, kindly invited the State Board of Health to meet with the executive committee of the Society in the Sir Walter Hotel on September 18 for the purpose of presenting an outline of the plan. Dr. Reynolds and I attended. After an explanation of the proposed course, the committee gave its unanimous approval.

The plan followed in inaugurating the work was to send out a joint letter signed by Dr. McBrayer as secretary of the State Medical Society, and by myself as special agent of the Children's Bureau and director of the maternity and infancy service of the State Board of Health. This letter went to each regular practicing physician in the district about two weeks in advance of the proposed lectures. This was followed by a postal card from the district councilor about a week before the lectures. The district councilor was asked to designate the town in his district to hold the lectures. Upon the designation by the district councilor of the town, we took the mater up with the district councilor and the local county medical society. The officials of all the county societies were helpful in arranging the program. The district councilor was consulted particularly, and most of them aided materially in making the course a success. Dr. McCord was only able to conduct three of the district courses. The first of these courses was put on at Greenville, beginning Monday, October 21, 1935, and the Pitt County medical society, together with Dr. Pace, the district councilor, made every effort to make the course a success. The meeting was held in the Rotary Club Building, which was secured by the local physicians, and the wives of some of the physicians very kindly served a buffet luncheon at one o'clock on the first day of the series. This was greatly appreciated by everybody concerned. A good attendance of physicians was present, and the course started out under the best auspices possible. In the first course a total of 56 physicians attended, the average being about 45 daily, and 31 different communities were represented. Naturally we felt that the success of that enterprise from the start was due to the hard work of Dr. Pace, the district councilor, and his associates in the Pitt County medical profession.

The second of the McCord series was held at Gastonia, beginning Monday, November 4. Dr. Houser, the district councilor in that district, selected Gastonia, and the local profession arranged for the course to be given in the Masonic Hall. Dr. Charles H. Pugh of Gastonia was made chairman of the arrangements committee together with Dr. Houser and other physicians in that section, including the health officer, Dr. Rhyne. Every preparation was made for this course of lectures. About 75 different doctors attended this course, several of them coming back every day. The average attendance was about 53. About 35 communities were represented.

The third of Dr. McCord's courses was held in Raleigh, beginning Monday, November 25. The Wake County Medical Society acted as host, and through the efforts of Dr. McLeod, the secretary of the society, an excellent room in the City Auditorium was procured free of charge for the

lectures. A total of 96 different physicians in this section registered on one day or the other. The average attendance was 54, and 34 different towns were represented. In addition, the officials of the Wake Forest Medical School brought over about 30 medical students from the second year class of the Wake Forest School each day. Dr. Carter, professor of obstetrics and gynecology of the Duke University Medical School, came over for about two of the lectures, and one of his associates came with the other members of his staff every day. At the conclusion of the lectures, Dr. Carter wrote the following letter in commendation of the work:

"Dear Doctor Cooper:

"May I congratulate you upon the McCord lectures. My entire upper and house staff enjoyed them thoroughly and wish me to express to you their delight in such presentation of a subject dear to their hearts. It really was a great step forward.

Sincerely yours,

Bayard Carter, M.D.,

Professor of Obstetrics and Gynecology."

The Children's Bureau defrayed all the expenses of Dr. McCord, including the provision of the films and the projectors used in his lectures. About fifteen films were put on, each illustrating a practical phase of obstetrical work met by the general practitioner in the ordinary course of his practice.

As the lectures naturally are more convenient to physicians who have to drive several miles to attend them, it has been found best to hold them in the summer or fall months. It was decided upon at the conclusion of the lectures in Raleigh that it was best to defer the conclusion until the spring months. In the meantime Dr. McCord resigned from his active work with the Children's Bureau and was not available for any more lectures. For financial reasons the Children's Bureau could not continue the lectures as promised in the early spring, but they gave their approval for the State Board of Health to pay from Children's Bureau funds the next five courses which were to be inaugurated in the spring. The two concluding courses at Statesville and Asheville were paid for, however, by the Children's Bureau and not from allotment of Social Security Funds to the State Board of Health. Thus they defrayed half the expense of the lectures and the Maternity and Infancy Department of the State Board of Health defrayed the other half, that is, the cost of the lecturer, the films, and so on. The Children's Bureau secured Dr. Franklin F. Snyder, associate professor of obstetrics in Johns Hopkins Medical School, for the first five lectures this spring. This series was held consecutively, beginning in the First District at Elizabeth City on Monday, May 11.

Dr. Snyder opened his lectures in Elizabeth City on Monday, May 11. Dr. C. B. Williams, the district councilor, had made every provision for the lectures to open in the Virginia Dare Hotel. Dr. Williams attended

every lecture every day and gave his personal support to assure the success of the undertaking. A total of 31 different physicians registered there and the average attendance each day was about 20. We feel greatly indebted to Dr. Williams and the profession at Elizabeth City for their many acts of courtesy in the work there. The second of the Snyder series was held at Wilmington in the Third District, beginning May 18. Fifty-eight different physicians were registered and the average attendance for the five days was about 29. Dr. Bullock, president of the Third District Medical Society; Dr. Robertson, the district councilor; and the local profession in Wilmington were very cordial in their hospitality. The third of Dr. Snyder's lectures was held in Rocky Mount, in the Fourth District, beginning Monday, May 25. The average daily attendance there was about 23. The local profession secured the Y. M. C. A. hall for the lectures at Rocky Mount and extended many other courtesies to Dr. Snyder. The fourth of Dr. Snyder's series was held in the Fifth Councilor District at Fayetteville, beginning Monday, June 1. The average daily attendance there was about 29. A total of 29 communities were represented. The local profession at Fayetteville, particularly Dr. Foster and Dr. McMillan, the district councilor there, did everything possible to make the course pleasant. The fifth and last of the Snyder series was staged at Winston-Salem, in the Eighth District, beginning June 8. The average attendance there was 29. A total of 25 communities were represented. We have a number of commendations from individuals in that section about the work there. Dr. Roy Mitchell, of Rocky Mount, the district councilor, and the local physicians in Winston-Salem were very cordial and did all they could to make the course a success.

Dr. J. R. Terry, district councilor of the Ninth District, did everything possible to assure the success of the course in the Ninth District. Dr. Herman, Secretary of the Iredell County Medical Society, was very helpful in making arrangements.

The lectures at Wilmington were held in the Cape Fear Hotel, those in Winston-Salem in the Robert E. Lee Hotel, at Fayetteville in the Y. M. C. A. building. In Statesville the lectures were held in the Vance Hotel. The last of the series was staged at Asheville, in the Tenth District, beginning Monday, June 22. The lectures there were conducted by Dr. Davis. The average attendance was about 32 and 21 communities in the district were represented. Dr. Murphy, the district councilor at Asheville, together with Dr. Ward, member of the State Board of Health there, made arrangements for the series.

Dr. Grady Dixon, member of the State Board of Health, in Pitt County, Dr. J. LaBruce Ward in Asheville, and Dr. S. D. Craig, member of the State Board of Health, at Winston-Salem, and Dr. Large, member of the State Board of Health, at Rocky Mount, and Dr. W. T. Rainey, the Board member at Fayetteville, all gave their friendly assistance in promoting these courses. Dr. Boice, the district councilor at Rocky Mount,

with Dr. Large, were very helpful in securing a place for the meeting in Rocky Mount. The following whole-time health officers deserve our thanks for their very helpful interest: N. Thomas Ennett of Greenville, Allen Whitaker of Rocky Mount, A. H. Elliot of Wilmington, M. T. Foster of Fayetteville, J. R. Hege of Winston-Salem, John Williams of Asheville, and R. E. Rhyne of Gastonia. Several of the whole-time health officers, such as Dr. C. H. White director of the district health department at Burnsville, took his car and brought some of the local physicians to Asheville to the lectures every day. Other health officers to be commended in this respect are Dr. Cromartie in Bladen, Dr. Starling in Sampson, Dr. Morris in Oxford, and perhaps others.

From the foregoing brief account, it will be seen that practically every community of any size in the State was represented at one of these lectures. Every county of the hundred counties in the State had one or more physicians in attendance one or more days.

In my own opinion, and that of many others more competent to judge, this series of lectures has unquestionably been one of the finest things for a practicing physician who does any obstetric work that I have ever seen. Physicians on every hand have expressed to us their appreciation for this course. It has simply amounted to a post-graduate course to the fellow who has made the little sacrifice necessary to drive a few miles to get it, provided for him free of charge, and a course such as he could not get under three or four weeks in any of the metropolitan centers, with the great loss of time and money that would be incident to taking such a course. The questions discussed have been the practical problems of a practicing physician. The men who have given the lectures are fully qualified through training and experience as teachers of obstetrics and heads of clinic work, and the physicians who have attended all of the lectures in any series have not been slow to express their appreciation.

* * * *

I would be pleased to answer any question anybody has to ask about the work. I want to say to the district councilors I shall remember with lasting affection some of you who gave your warm sympathy and a million dollars worth of mental effort to this thing. We feel from the letters we have received from individual physicians that the ground work has been well laid for more of the same kind of work to be carried on and brought down to the individual counties.

That leads me to a brief discussion of what we hope to do with your approval and with the approval of the post-graduate committee of the State Medical Society. We want to coöperate with them. We want it to be a joint enterprise. We have now a moving picture projector machine and we want to get some films. We have some but we want the very best and newest that we can get and to have them available at any time to any Medical Society and we want to have it available beginning right away, as soon as the films come. We want not only to go on with that but to take in the pediatrists and to give the fellows post-graduate work in the field

of pediatrics. To do this it is my plan to ask the section on Pediatrics of the State Medical Society and the State Gynecology and Obstetrics section to give us a list of the men who specialize in their practice and whom they think would be willing to go out and make some of the lectures to our County Societies. Then when the County Society wants to put on one of these lecture programs—it could be put on at night perhaps, with another to follow in a month—they could put on four or five different subjects and invite every man in the County Medical Society to attend. The person who gives the lectures could put in whatever is necessary that the picture does not have. The lecturer would be selected from the list of obstetricians and pediatrists available. The only drawback is films. We have got some new films in the field of obstetrics but in the pediatric field they are very limited. They are not in existence, though as all of us go about every day we realize that we could get any number of illustrations that would be intensely interesting. We have a movie council prepared to get some of these local measures for illustration. I don't know how we will come out with that. However, I want you to understand that that is the plan we have worked out—to furnish lists for the physicians and if any County Society wants one of the specialists for a lecture he can secure one or more. I am particularly impressed with some of the letters I have received expressing hope that this is only the beginning and that it will be kept up and brought down to the individual society so that every man will have an opportunity that wants to come out. The Children's Bureau has formed a corporation for the manufacture of films in the United States in the fields of maternity and infant hygiene. They have invited us to come to their office for a joint meeting some time soon at which time they can submit films they will recommend to us. We don't want anything but first class, modern type. That, in brief, is the hope we have in going on, provided, as I said in the beginning this organization, including the postgraduate committee approves of this work. I want you to understand that we have no cut and dried inventions that can not be modified to suit the judgment of the physicians of your view point who have put thought on the matter and who represent the State Medical Society. I would be particularly grateful at any time, and of course Dr. Reynolds would, for any suggestion you may have that we can practically carry out within the limits of legal operation and financial resources and at any time we can do any of this we shall certainly be glad to help out. I would like for you particularly to consider and let me know what you think about the desirability of the plan of engaging the local men wherever a County Society will select one to come to make a lecture and give an exhibition of the films. We can make up two or three recommendations, in case one does not work out. I wish you would take the proprietary interest in it. My method is to do things before we start instead of after. I am deeply grateful for the opportunity to come here and make this report and to have worked with the physicians in this work.

PRESIDENT STROSNIDER: What shall we do with the report?

. . . Motion made that report be accepted. . .

PRESIDENT STROSNIDER: Any discussion?

SECRETARY MCBRAYER: Mr. President, I wanted to put in the record the fact that I have known Dr. Cooper longer than any one here—you have all known him for a long while—and there is no doubt in my mind, there never has been any doubt in my mind, but what he is one of the most loyal members of the medical profession and to its organization. It has always been a great pleasure for me to coöperate with him, personally or otherwise, or in any way that he desires and I feel like we ought to express our appreciation of what he is doing and what he is planning to do. Dr. Hardin and Dr. Sherrill of the Committee on Post-graduate Work are here and I understand they are to have a conference with Dr. Cooper immediately after lunch and I have felt, and feel now, that where we have a committee that is supposed to coöperate with other organizations, that committee ought to be a regular committee of the State Medical Society. The Post-graduate Assembly Committee is in this instance and I am glad that Dr. Cooper and this Committee are dovetailing their activities. I think this committee is going to soon tell you what their plan is and while they are out, I will say they are planning a Post-graduate Assembly to be held at Banner Elk in which Internal Medicine and Diagnosis will be featured. They will explain that for themselves when they come in.

DR. MCBRAYER: The next item listed is a Report of Committee to Confer with Industrial Commission—Drs. Cobb, Hocutt and Smith. I put this down because it is one of our outstanding committees. They made a full report to the House of Delegates in Asheville. I did not even ask them to make a report because I did not think they had anything else to report. One or two of you were not at Asheville but I can say that about as fine a piece of work was accomplished by them as by any committee we ever had.

I wanted to mention the Resettlement Administration. They are getting along better now I think. The Committee had to be relieved because they didn't seem able to function about a year ago. I think a Committee ought to be appointed because they are getting a good settlement with two or three hundred people. I went to see one of them a short time ago. They are very anxious to have folks taken care of and I told them the State Medical Society would be glad to coöperate with them when they get a little further along. They plan to build a Doctor's office and have a nurse to stay there all the time, and have three rooms where patients could be cared for temporarily.

I move that a Committee of three be appointed to take the matter under consideration.

. . . Motion seconded, voted and approved. . .

PRESIDENT STROSNIDER: The Committee on Post-Graduate Assembly is ready to report. We will now hear from Dr. Sherrill.

Dr. Sherrill: Mr. President, there is not a great deal to report for the last year. We had a very splendid meeting up at Banner Elk. We had men from all over Central and Western North Carolina for two days. We had a mighty good program and it was well attended. I understand it is the President's idea to carry on post-graduate work. I have talked with Dr. Cooper. I want to say I heartily approve of his program. I think it is splendid. The lectures on obstetrics at Statesville were the best I have ever attended. The short course of Dr. Davis' with moving pictures was the most vivid course of lectures I have ever seen or heard. Right now what is confronting our Committee is how much work we want to go ahead with. We'd like to have an opinion or expression from this Committee here, the Executive Committee, about how much work you want us to do. We had a meeting some time ago at Morganton and decided to put on another clinic at Banner Elk in August, medical or therapeutic, wherein any number of men in and around and throughout North Carolina will speak. I think they have all accepted except friend Johnson (indicating Dr. Johnson who said, "Mine is in the mail.") We want to have a real good meeting. I don't know anywhere better to have it than right at Banner Elk. Many of the doctors like to come up there and have the fellows from the East and have a two-day meeting in August. We'd like to make it as attractive as possible. We were wondering if we could get a good key man, an internist from out of the State. We haven't invited anybody yet because we were not sure about funds for transportation and expenses. We wanted to mention the matter here today that we had this in mind.

If it does not conflict with Dr. Cooper's program we will possibly have a series of day and a half or two-day lectures or clinics either in central or eastern Carolina early in the fall or winter, depending on when it would be best suited for the men in general. I understand Duke puts on a clinic each year. We don't want to put it too close to the Duke clinic.

We would like to have an expression here today about what the committee thinks we should do. I believe that is about all, Mr. President.

President Strosnider: Gentlemen, you have heard the report of the Committee. Any suggestions to offer about what the Committee has done, is doing now? Any discussion?

Dr. Howser: I think the committee is doing an excellent piece of work. When a fellow doing general practice, like I am, takes a day or two days off and goes down to Duke in the fall and hears what they have to say, and goes up to Banner Elk and hears about gall bladders, and goes to Dr. Cooper's obstetric meeting, the first thing you know by running around a day or two in summer and winter, we have got in a little post-graduate course. It helps us and it helps our patients. Personally, I appreciate it very much. I was delighted to hear them say they were putting on a course at Banner Elk for internal medicine. I am glad to see all these things in Western North Carolina. I think it is a good idea. I think it would be better to put on two similar courses—one in Eastern and one in

Western North Carolina—of a day and a half or two days. A man can travel a couple hundred miles from the extreme western to the extreme eastern part of the State but it is a hardship on him.

I'd like to see you get a key man from out of State. We have got some mighty good doctors but a lot of people will come who otherwise wouldn't, if we have one key man from out of State—probably not as good as people we have in the State, but advertised. It tends to act as a drawing card to get them there.

I want to make a motion that we thank the committee for the good work it is doing and if the finances will permit, suggest that they select some good man to bring in. I feel that is the thing to do—to bring him in and put on these post-graduate courses.

President Strosnider: I have a suggestion to offer that may be helpful. In Wayne County for two or three years in opening up the fall work we have been bringing in outside guests—inviting men in as our guests—for this particular occasion—outstanding men in various subjects, and it has been very helpful and I make the suggestion that perhaps you may want to do it as missionary work in post-graduate work. You are starting something that we hope will eventually come to be staff post-graduate work. That is what we hope this committee will eventually come to. I am offering the suggestion to the respective counties. It has worked wonderfully well in Wayne. I feel it would be excellent missionary work down in the eastern part of the State. You folks are afraid of mosquitoes down there now. We have got a number of wide-awake, active men in the East just as interested in this post-graduate work as you are up here and I feel I want to make this suggestion to the committee that we have some of the meetings down in our section—one in the western part of the State, one in the central, and one in the eastern. You have done an outstanding piece of work and I want to congratulate you on the work done at and up to the present time.

Dr. Cooper: My work touches the profession closer perhaps than any other department except the laboratory. I always like to work in coöperation with the profession. I understand that post-graduate work of this character is strictly professional, but in planning new work such as the matter of indigent women we never come in contact with physicians. I would like to know if you have a steering committee to confer with on short notice. From time to time I have regarded Dr. McBrayer as a source of information and have written to him. I should like to continue that if it doesn't burden him too much. If you have any special committee to pass on new work, I would like to have that information so that we can go to them. I just offer that as a suggestion.

President Strosnider: One point the committee made was whether or not funds were available.

Secretary McBrayer: There will be this year.

Dr. Sherrill: As to the key men invited for the August meeting, we

thought possibly we might secure Dr. Stuart Roberts of Atlanta, Dr. W. D. Stroud of Philadelphia, Dr. J. E. Paullin of Atlanta, or Dr. J. H. Musser of New Orleans—one of those four men, if we had the funds to obtain them and bring them here. The men who have signified a willingness to present papers are Dr. Johnson whose acceptance is in the mail now, Dr. D. C. Smith of Charlotte, Dr. C. C. Carpenter of Wake Forest, Dr. McNider of Chapel Hill, Dr. Bernard Smith of Asheville, Dr. William Allen of Charlotte, Dr. D. W. Holt of Greensboro, Dr. Clyde Gilmore of Greensboro, Dr. Caviness of Raleigh, Dr. W. R. Johnson of Asheville, Dr. W. H. Smith and Dr. H. B. Ivey of Goldsboro.

Another thing I would like to bring up in connection with arranging meetings in the central and eastern parts of the State—the committee would like for some committee to be appointed down there locally. If the President or the Secretary would appoint a man in the central and also in the eastern part of the State to act as chairman of that particular section, I think it would be much better than for us to try to handle it from here.

President Strosnider: That is a good suggestion. Thank you, Dr. Sherrill.

If there are no other suggestions, we will proceed to the next item.

Secretary McBrayer: The next thing is a report of the Committee on Cancer by H. B. Ivey, Goldsboro. I did not ask Dr. Ivey to make a report because the President and I had a conference with him a few weeks ago and I think he is planning a very fine piece of work if he can get the coöperation of even half the county medical societies of the State, but he wants the county medical society to take care of the situation locally. I think it is a very good idea.

I have item number 11—Request from St. Louis Society in regard to silicosis. I will read:

ST. LOUIS MEDICAL SOCIETY

3839 Lindell Boulevard
St. Louis, Mo.

March 9, 1936

Secretary of the North Carolina State Medical Society,
Raleigh, N. C.
Dear Sir:

No doubt your Board is constantly confronted with various propositions in which it needs a great deal of help, not only from the members of the medical profession, but from the public at large. I think this is true of every ruling medical board anywhere in the world. This being true I am writing you for an expression and assistance in a project that the St. Louis Medical Society is trying to, in some way, fathom for the best of

all concerned. It may terminate in national legislation, but for the present it is a question of coöperation.

You, no doubt, have read the screaming headlines of the newspapers concerning silicosis and various other conditions influenced or produced by the inhalation of dust as well as the smoke or the polluted air of various municipalities and probably you are wondering as well as we what we are going to do about them and how can we best, as medical men, help to control or abate them.

First, what do you think of a uniform rule worked out by the United States Public Health Department, which Department has made investigations throughout the United States and other countries on this subject? This rule being made general, realizing that each local community has its specific problem, but the basic principle, of course, being the same all over the entire United States.

Second, what do you think of finally suggesting from this general rule federal legislation so that the Department of Health in Washington may have the authority to assist the enforcement of this rule which might become a law?

Third, owing to the fact that the Department of Health is handicapped by state lines and cannot go from one state to another or enter any state until asked to do so and then has no authority to set penalties for violation of such a rule which may in the future become a law. Do you not think the United States Public Health Department should have more authority, yet not enter the practice of medicine?

Fourth, you, no doubt, realize that if a health hazard exists in one state and legislation is passed in that state which would, to a certain extent, eliminate same it is possible for that industry to move across the state line into another state which has no law governing those conditions and continue the hazard.

I feel sure that you will agree with me that organized medicine does not in any way wish to burden industry, but it is our job to assist in every way possible to make better working conditions for labor which is incompetent to look after itself from a health standpoint, and assist industry in every way we can.

Fifth, I further believe that you will agree that all industry will assist and so will the public if we have something uniform that we agree upon so that it will not affect one hazardous industry more than another.

Now Doctor, this committee has made certain suggestions to the Public Health Department in Washington, as well as the Treasury Department which controls the Public Health Department, and both Departments feel very kindly toward these suggestions, but for their own edification they would like to have an expression of the entire medical profession throughout the United States which will shorten their road for many a mile and assist them in the formation of such rules and regulations

as might fit the condition mentioned above as well as any other industrial hazard that may affect many workers which, of course, is unlike accidents.

Sixth, this Society and many of the public health departments of various cities have gone into the smoke proposition and have proved beyond a doubt that smoke is not only a nuisance, but it is expensive and definitely detrimental to health. Therefore, this Society would like to have an expression from you. Of course, as you well know, this program cannot be completed over night. It is a long, tedious, uphill proposition in which we all must coöperate.

I have tried to set forth in the articles above what we are attempting to do, and we need assistance. We feel sure that the medical profession of the various states will take kindly to these suggestions and give any further suggestions they see fit before the final proposition is referred to the United States Government for unifying or probably enacting into a federal law.

Thanking you for an early reply and any questions or suggestions that may assist us, I remain

Fraternally yours,
JOHN S. YOUNG, M.D., *Chairman,*
Smoke Committee.

SECRETARY MCBRAYER: This letter was directed to the Secretary and the Secretary replied as follows:

JOHN S. YOUNG, M. D., *Chairman* June 3, 1936.
Smoke Committee, St. Louis Medical Society,
3839 Lindell Boulevard,
St. Louis, Mo.

MY DEAR DOCTOR:

Your letter of March 9 was duly received and in reply thereto will say that we got an appropriation of $10,000 from the last General Assembly, 1935, which was given to the Industrial Commission for scientific work by physicians in connection with their study of silicosis and also a demonstration of the Compensation Act in regard thereto and when the appropriation was made by the Social Security Act the funds became available for use for this purpose through the State Board of Health so that by common consent of all concerned the $10,000 payable to the Industrial Commission was used by the State Health Department in order to get funds from the Social Security Act, following that the State Board of Health employed two physicians recommended by the State Medical Society and an engineer from their own department to first make a study of this matter, and second, administer it under the general title of Industrial Hygiene and for the time being with special reference to the relation of dust.

These two doctors are experts in the use of the x-ray and x-ray of the chest particularly. In the meantime they spent a month at Boston and are

spending a month or two now in Washington in connection with the management of silicosis and its prevention.

I wouldn't want to change the set-up that we have, however, I will talk this matter over with the interested persons including the President of the Medical Society of the State of North Carolina and the Executive Committee and will let you hear from me further.

Very truly yours,

L. B. McBrayer,
Secretary-Treasurer.

LBMcB/E

Secretary McBrayer: I just wanted to present that and if you have any suggestions I would be glad to have them. If you don't care to give any, why we will go on.

Dr. Johnson: Mr. President, it seems to me that that is covered pretty well in the A. M. A. I notice you referred to it on the agenda. A resolution was introduced by Dr. A. R. McComas, of Missouri, on the control of all occupational diseases, particularly silicosis. The Reference Committee on Hygiene and Public Health presented the following resolutions for the control of occupational diseases:

"Resolved, That it be deemed essential that any active efforts by governmental agencies to study and to take measures tending to eliminate occupational diseases should be carried out under the supervision of the city, state or federal departments of health in this country and that this Association do all within its power to assist in this endeavor; and be it further

Resolved, That the Board of Trustees of this Association continue and enlarge its study of industrial hygiene, occupational diseases, and particularly silicosis, to the end that uniform legislation be put into effect in all the states to control these conditions."

Dr. Johnson: (Continuing) About all that is necessary for us to do is to refer them to the A. M. A.

Secretary McBrayer: If there is no objection, that will be done, although I am opposed to that.

President Strosnider: I think our Secretary is handling the situation.

Number twelve on the agenda—Election member Board of Directors for three-year term Hospital Savings Association of North Carolina, Inc. Term of Dr. John B. Wright expired.

Secretary McBrayer: I would like to say just at present that Dr. Lawrence talked with Dr. Wright about continuing for another term and he asked to be relieved and said he was so busy that he felt like he hadn't given it the attention it deserved and that he ought to have given it and he would like to be excused from serving further, and under those circumstances I think I'd like to place the nomination of Dr. Paul Ringer.

. . . Nomination seconded, vote taken and carried. . .

SECRETARY MCBRAYER: Mr. President, I just had, and I thought you'd like to hear, a letter from Dr. West, Secretary of the A. M. A. He wrote me and asked me what our dues were and I suppose he was writing every secretary. (Reads)

DR. TERRY: I wonder if it still would be possible for our Secretary to secure from the Secretary of the A. M. A. the dues of all the medical societies of the different states so that we could have a little data or information to go on?

SECRETARY MCBRAYER: Mr. President, Number 14 on the agenda refers to a motion of Dr. McIntosh on page 48 of TRANSACTIONS of the House of Delegates in Asheville and has reference to the WPA. He didn't think they are allowing the men to select their own physicians During the discussion Dr. M. C. Palmer, of Polk County, took issue with Dr. McIntosh and stated that they certainly were allowed in his county to select whatever physician they wanted. A motion was put and carried at the bottom of page 49. The motion read: "I should like to see this convention take some action so that the people who are working for the Government in the WPA, the PWA, or whatever it is called, may have the right to use the physician of their own choice, just like, we have learned, they may now select their own physician if they happen to be working for private corporations. About the middle of the page motion was made that Dr. McIntosh's request be granted and it was carried. It was left to the incoming president to appoint that committee, so there is nothing for us to do about it. I wanted to bring it up so that you would know.

PRESIDENT STROSNIDER: We now come to Number 15—Extract from Address of President James S. McLester.

SECRETARY MCBRAYER: Yes, that goes over to the Minutes of the House of Delegates of the A. M. A. We have several items in regard to that. I should like to ask Dr. Wingate M. Johnson, President-elect, to give us the gist of these things referred to and you can find them on the pages indicated there. (Pages 1816 and 1817 for Dr. McLester.)

DR. JOHNSON: You mean the gist of Dr. McLester's address? Dr. McLester's address dealt chiefly with the unsettled condition that affairs are in now. He feels that socialized medicine is still sleeping and that we should keep our eyes and our ears open for further developments along that line. He is hopeful of the outcome. He feels that the great majority of the members of the A. M. A. and doctors of the country are opposed to state medicine.

He raises several problems or questions which are to be considered, which he didn't help answer.

1. The question of medical education. The admission of students to schools should be kept at a high standard.

2. The question of how the certification of specialists can be dealt with.

3. The question as to what effect hospital insurance schemes should have upon attending physicians. He leaves it to the consideration of the Bureau of Medical Economics.

4. He raises the problem of the care of the indigent. Whether or not it is to be taken care of by local tax. He leaves it unanswered as to what our attitude shall be.

5. He raises the question of patent medicines; the use and abuse of radios.

That is about all there is in his address.

The speech of the President-elect, Tate Mason, was read by his personal physician, Dr. Brien T. King, of Washington. I thought it was more clear-cut, more to the point. He says in traveling throughout the country he felt that the majority of the Doctors of the United States could be divided into three great groups in attitude toward socialized medicine.

The first group, which he designated as Group A, felt that the A. M. A. was not aggressive enough in leadership, that they should recommend some plans that could be put into practice throughout the country. That is a rather small group.

Group B believe there should be a radical change in medical service.

Group C carried the largest number of physicians. It is satisfied with the leadership of the A. M. A. and feels that we should not be stampeded into making any radical changes or adopting any unsound schemes in our medical service. Whenever we have a time of depression, a number of radical remedial measures are put forth but as the depression subsides, the panaceas are abandoned and forgotten.

That is about all, Mr. President. That covered 15 and 16 in our agenda.

Secretary McBrayer: He'd just as well go right along with 17 and 18, etc.

Dr. Johnson: I don't want to monopolize things.

Number 17—Opposition to the practice of medicine by laymen or corporations (page 1822).

Dr. Albert Soiland, Section of Radiology, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

"Resolutions on Taking Steps That Will Result in Practice of Medicine Being Conducted by Physicians and Not by Hospitals

Whereas, certain lay groups in this country are arranging for or attempting to arrange for the provision of diagnostic medical services along with and as a part of hospital services; and

Whereas, the provision of such diagnostic medical services must inevitably foster fundamental changes in the practice of medicine; and

Whereas, the American Medical Association is of the opinion that the practice of medicine should at all times be confined to fully licensed physicians; and

Whereas, Article 6, Section 4, of the Principles of Medical Ethics sets forth the following:

"It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

Now therefore be it

Resolved, that the House of Delegates of the American Medical Association is unalterably opposed to such practice; and be it further

Resolved, that the House of Delegates of the American Medical Association is opposed to the division of any branch of medical practice into so-called technical and professional portions; and be it further

Resolved, that the Council on Medical Education and Hospitals of this Association be and is hereby authorized and directed to take such steps as will result in the practice of medicine being conducted by physicians and not by hospitals; and be it further

Resolved, that the said Council be and hereby is directed annually to report to this House of Delegates such progress as it is able to achieve from time to time."

No action was taken on that resolution. There was, however, included in the Report of the Reference Committee on Reports of Officers a paragraph on page 1906:

"Your committee considers that the invasion by hospitals of the field of the practice of medicine should be condemned as a violation of the fundamental rights of physicians and that it demands militant opposition to the end that such activities cease."

That report was adopted so that resolution went with it, virtually covering the resolutions of Dr. Soiland.

Number 18—Resolutions on Favoring One Basic Law Governing Industrial Health Propositions.

Whereas, the incidence of industrial diseases is growing more and more serious each day with special reference to chest condition produced by the inhalation of dust; and

Whereas, there is no uniform law governing the operations of various industries in our many states; and

Whereas, neither labor nor industry knows where it stands, therefore, both are at a disadvantage; and

Whereas, there is no adequate uniform regulation to protect either the laborer or the industry; and

Whereas, under the existing circumstances it is impossible for the small industry to carry insurance to protect its existence on account of high premiums; and

Whereas, due to the lack of uniformity of laws large insurance companies are reluctant to take the risk of carrying any company who may have the least semblance of dust during its operation because there is no adequate law to force the employee to obey the rules of the company; and

Whereas, most of the larger companies are engaged in interstate transactions and, therefore, difficult for each state to enforce the laws that already exist; and

Whereas, certain companies are daily moving from one state to another in order that they may have protection, or that they may dodge some adverse legislation that may be passed while they are operating in said state; and

Whereas, due to the lack of uniformity of law concerning these health problems; many cities and states are losing incomes that they are justly entitled to by virute of the fact that the company under consideration is located in said state or city where prohibitive legislation is bad; therefore be it

Resolved, that it is the official policy of the House of Delegates of the American Medical Association to favor either federal legislation on these points or some uniform compact between states so that there will be one basic law governing all these health propositions."

That one was presented by Dr. A. R. McComas, of Missouri, and was referred to the Committee on Public Health.

I was impressed with the work of the House of Delegates of the A. M. A. Two or three things I'd like to side-track just a minute and say.

The first is that it is as democratic an organization as I have ever known. There is absolutely no gag rule. Anybody can speak as much as he likes and is listened to attentively.

Second, the tremendous amount of business that comes up impressed me. They have reference committees to cover every phase of medicine and in the first session the resolutions were introduced. One after another were referred without any comment of any kind to a reference committee. They went into session and studied the question and recommended whether the resolutions held. Usually the work of the committee was accepted.

In this committee—I was on the Committee on Executive Session—I learned that they really do work. The man who introduced the resolution may come in to give his side or reason. Any opposed to it may come. It

is sort of open house. These committees consider resolutions simply in the interest of time.

You do not refer to Dr. Van Etten. He is the best presiding officer I ever saw. He was most courteous. In his opening address he expressed two things. First, he wanted every delegate to feel free to discuss all questions presented to the democratic House of Delegates; and second, he expressed his opinion on the political influence of the Doctors. He said every physician is politically potential. Every physician going into various homes has a tremendous influence with the family for which he prescribes. He used one expression which struck me as worth remembering, "He must acquire much more than a superficial knowledge of political machinery and must take his place therein. Dignified aloofness is stupidity dictated by laziness."

Number 19—Resolutions on Entrance Requirements to Medical Courses of Educational Institutions.

That was a resolution presented by Dr. H. A. Luce, of Michigan:

"Resolved, That the House of Delegates of the American Medical Association transmit to the Council on Medical Education and Hospitals the recommendation that entrance requirements to the medical courses of the educational institutions of the United States be conditioned on the character, personality, adaptability, social fitness and motivations of the applicant as well as on his academic training."

That was passed unanimously.

Now Number 20—Resolutions on Contraception.

That was introduced by the Secretary, Dr. Olin West. It was referred to the Committee on Executive Session (that was the committee I belonged to) and it was a long report. You can read it for yourself. The Reference Committee on Contraception presented a report from the committee which had been appointed to study the question in the interim. The recommendations of the Committee to Study Contraceptive Practices and Related Problems were:

"1. That a committee be appointed to continue a study of Birth Control and to report further to the House of Delegates.

2. Steps should be taken by some responsible group to develop standards for judging contraceptive materials.

3. Your committee desires to record its disapproval of propaganda directed to the public by lay bodies, organized solely for the purpose of disseminating (without consideration or restraint) contraceptive information. Your committee deplores the support of such agencies by members of the medical profession. We feel that an entirely false sense of values with respect to the important function of childbearing and of parenthood has been created by the activities of such organizations."

Now our committee offered its recommendation that

"The reference committee approves the first and third recommendations of the Committee to Study Contraceptive Practices and Related Problems but does not approve the second. It does not feel that there is yet sufficient knowledge of the subject to go that far and feels that disapproval of certain contraceptive devices would by inference approve others."

This was passed by the House in Executive Session.

Number 21—Report and Recommendations of Judicial Council in Regard to Physicians Sentenced for Felonies with Particular Reference to Violation of the Narcotic Law.

Now that is where North Carolina came into the limelight rather unfavorably.

"There are at present several members of this Association who are either serving sentence for felonies or have recently terminated such sentence. Their names are carried as members in the American Medical Directory. This condition is brought about by county societies and state associations neglecting or refusing to expel such felons. The Judicial Council believes that the continuance of such men in membership, and the publication of their names as members in the American Medical Directory, are beneath the dignity of this Association and open the door to harmful criticism of the organized profession. The Council at the proper time will offer a suggested amendment to the Constitution to relieve the present situation.

"The report of the Judicial Council to the House of Delegates last year said in part, 'It might be advisable to extend the origination of charges in some situations manifestly too great for the county society to handle to the state association and possibly, in rare instances, to the national organization. There rarely would be infractions of such magnitude that the national association and seldom that the state association should be the originator of any action toward discipline. If and when the House of Delegates sees fit to extend original jurisdiction in matters of discipline to the national organization, the Judicial Council suggests that it should have the duties and powers now conferred on it, but it should not at any time be placed in an ex parte position. In those instances of abuse of such nature or such magnitude as to warrant national rather than state or county institution of proceedings, there should be some other body, either now in existence or created, to act as grand jury to investigate and, if deemed proper, prepare an indictment against the accused. In case of indictment, the Board of Trustees should assign the prosecution to some one of their choice and the case should be tried before the Judicial Council, which under such procedure would not be under suspicion or prejudice.'

"On recommendation of the reference committee to which the report was referred the Council was directed to 'submit amendments to the

Constitution and By-Laws of the Association as are necessary to secure the purposes sought.' The Council has found such revision comparatively simple and will submit such amendments at the proper time."

Now the amendment as finally passed is found on page 1921, middle of first column:

"An amendment to Article 8, Section 1, of the Constitution was presented to your committee. After careful consideration and in conference with the Judicial Council it was deemed advisable to incorporate the amendment in the By-Laws, Chapter XI, Section 1. As this amendment originated with the Judicial Council, your committee feels that this change will be entirely satisfactory to the House. Your committee therefore suggests the following amendment to Chapter XI, Section 1, first sentence: 'Membership in this Association shall continue only so long as the individual is a member of a component society of the constituent association through which he holds membership and who is not now serving, or within twelve months has not served, a sentence for felony.' "

Number 22—Report of Reference Committee on Medical Education. (Page 1904) (Paragraphs 1, 5 and 6)

Secretary McBrayer: Tell us just where we come in to that.

Dr. Johnson: In paragraphs 1, 5 and 6 of Dr. George Blumer's report:

1. Your committee approves the general principle that physicians on the staffs of hospitals approved for intern training should be limited to members in good standing of their local county medical societies.

5. Your committee commends the plans for the study of graduate training of physicians in its various phases and regards graduate training as one of the most pressing problems facing the medical profession at the present time.

6. Your committee also commends the attention which the Council has given to the question of intern training and endorses the recommendations of the Council in this matter.

The following is the Resolution on Entrance Requirements to Medical Courses of Educational Institutions:

"Your committee recommends the adoption of this resolution, realizing that the subject will require a great deal of additional study in order to arrive at satisfactory methods of administration."

Number 23—Report of Committee on Medical Education in Regard to Division in Professional and Technical Services. (Page 1904—paragraphs 1 and 2.)

Your committee submits the following recommendations:

"1. It reiterates the principle enunciated by the House of Delegates at Cleveland in 1934 'That the practice of radiology, whether for diag-

nostic or therapeutic purposes, constitutes in fact the practice of medicine.' The action of the House of Delegates in 1925 establishing a section on radiology confirms this principle.

2. It further recommends that all services connected with the practice of radiology be under the direct control and supervision of the medical profession, and this same principle pertains to other technical and professional services."

SECRETARY MCBRAYER: We have had a good deal of trouble lately with hospitals in regard to that.

DR. JOHNSON: Along the same line is Number 24 on page 1906, paragraph 6, "Your committee considers that the invasion by hospitals of the field of the practice of medicine should be condemned as a violation of the fundamental rights of physicians and that it demands militant opposition to the end that such activities cease."

Number 25—REPORT OF BUREAU OF LEGAL MEDICINE AND LEGISLATION (Page 1908) (Page 66 to 79 Handbook Social Security Act).

Resolution on gun-shot wounds:

"Your committee recommends that, where legislation is enacted by which gunshot and other wounds are made reportable by physicians, the medical profession should insist that the same requirements be imposed on every other person having knowledge of the wound and the possible conditions under which it was inflicted."

SECRETARY MCBRAYER: Read reference 79 on page 1909.

"Page 79 of the Handbook 'Coöperation with State and County Association': The report of the Bureau of Legal Medicine and Legislation herein raises a very important question as to the advisability of carrying on all consultation and correspondence directed to the Bureau of Legal Medicine and Legislation through the offices of the constituent state associations. The question of the facility of this plan would depend very much on the willingness and capacity of the organization of the constituent state associations to care for the additional matter which would pass through their respective offices. Your committee recommends that this subject be brought up for discussion at the next meeting of the Conference of Secretaries of Constituent State Medical Association in order that it may be given more thorough discussion." Same approved.

I don't see as there is any action we can take on that. You'll have to make a recommendation at the meeting.

SECRETARY MCBRAYER: You'd better write me one.

We are going to get to narcotics in item 31.

Number 26—REPORT OF REFERENCE COMMITTEE ON EXECUTIVE SESSION (Paragraphs 1, 2, 4, Page 1910, with recommendations at the bottom of page 1911).

I have just read number 4, the report of the reference committee on contraception.

Number one was a short resolution that came before the Executive Session dealing with a memorandum from the Bureau of Legal Medicine and Legislation concerning the proposed omission of the item referring to legitimacy and illegitimacy from standard forms for reports of births and stillbirths. We did not approve of that because we felt that this was a legal and sociological rather than a medical question.

Number 2—"The resolution from the Oregon State Medical Society, asking that the Council on Medical Education and Hospitals withdraw approval from those hospitals which grant special privileges to any of their staff members in the form of lower rates for patients of such staff members, was approved."

That was introduced by a delegate from Oregon to cover a local situation there, where a hospital had a closed staff and used the privilege of working in a hospital in order to have patients admitted at lower rates, freezing out men with outside practice. That is just of local interest and won't cover us particularly unless something like that comes up.

Number 27—Training of Graduates of Medical Schools of Foreign Countries (Page 1912).

Dr. William R. Malony, Sr., California, presented the following resolutions:

"Whereas, through the initiation, support and watchfulnes of organized medicine, standards of medical education and medical practices have rapidly and continuously advanced; and

Whereas, there is a serious danger of this most satisfactory state of progress being undermined, and weakened by the registration to practice of graduates of medical schools of foreign countries; and

Whereas, there are at the present time more than 1,500 American students attending medical schools in foreign countries, many of them not having satisfactory credentials for admission to American medical schools; and

Whereas, there is in the files of the Council on Medical Education and Hospitals of the American Medical Association, and the Federation of State Medical Boards, evidence that many of the foreign medical schools do not consistently maintain and enforce the same high standards as are maintained in the medical schools of the United States; therefore be it

Resolved, that each applicant for medical license in the United States in order to adjust this inequality and to show a knowledge of acceptable medical practice, should be required before being admitted to a written examination before a properly constituted examining board to hold a license to practice in the country of his graduation and a certificate that

he has completed a year's work as an intern in a hospital approved for internship training or should complete the fourth year in an American Class A medical college; and be it further

Resolved, that the House of Delegates of the American Medical Association approve the foregoing and that a copy be sent to the properly constituted officers of each examining board of the United States and to the Federation of State Medical Boards, with the request that they consider seriously urgent need for the adoption of such rules and/or legislation necessary to put the purposes of these resolutions into effect."

This was referred to the reference committee on Medical Education.

Number 28—Resolution Requesting That State Association be Notified When Hospital Is Threatened With Removal From Accredited List (Page 1912—bottom; top page 1913).

Dr. John W. Amesse, Colorado, introduced the following resolution, which was referred to the Reference Committee on Medical Education:

"Whereas, protection of the inherent rights of the state medical societies which form the American Medical Association is a primary function of this House of Delegates; and

Whereas, promotion of state medical society activity and respect for state medical society responsibility are established policies of this Association; and

Whereas, the officially stated policy and customary procedure of the Council on Medical Education and Hospitals in regard to hospital ranking is a definite negation of these democratic and time-honored doctrines, the said Council having ignored the rights of state medical societies and having subsequently denied a respectful petition for correction of such procedure, as will be made clear by detailed documentary evidence accompanying this resolution; and

Whereas, as the result of summary and important actions taken by the Council without informing or consulting the interested state medical societies, uncertainty and resentment toward the Council exists in several states, inimical to the general policies of the Association, harmful to the welfare of its members, and deterrent to the ends sought by the Association through the said Council; now therefore be it

Resolved, by the House of Delegates of the American Medical Association that the Council on Medical Education and Hospitals, in all actions concerning the ranking of a hospital, shall notify the constituted authorities of the interested state medical society and shall allow said society a reasonable opportunity to be heard before the Council makes its decision."

That was boiled down by the Reference Committee on Medical Education to the following recommendation:

"Resolved, by the House of Delegates of the American Medical

Association, that the Council on Medical Education and Hospitals, in all actions concerning the rating of hospitals having to do with the appointment of interns and residents, shall, when a hospital is threatened with removal from the accredited list, permit such hospital to seek the advice and assistance of the authorities of the state medical society."

Number 29—Amendment to Constitution, Article 8, Section 1.

Number 30—Amending Chapter IX, Section 1, Constitution.

I have read that.

Number 31—NARCOTICS. (Page 1915—second column.)

"Our visit to the narcotics division disclosed some appalling evidence which substantiated the information that licensing boards permit 80 per cent of the physicians convicted of the illegal use of narcotics to continue in practice. We saw evidence that in one instance a physician purchased 65,000 half grain morphine tablets in six months. His license was not revoked although the facts were presented in court. In many cases it is difficult to obtain acceptable proof of administration of narcotics, but it would seem that known facts of this nature would be sufficient to bring about a revocation of license. Apparently the narcotic division is trying to coöperate with the state authorities. We were informed that the federal department does not take the initiative in regard to such violations or in enforcing them unless there is abundant evidence that an individual is an intentional trafficker in narcotics or is knowingly engaged in illegal use of drugs."

DR. JOHNSON: Now, just in connection with that—I think we can take them right together—a resolution was passed by this Committee on Executive Session as follows:

"Your reference committee finds that the failure of state licensing boards to take disciplinary action against physicians reported to them by the United States Commissioner as having violated federal narcotic laws or as being narcotic addicts has on two occasions led to threats of federal legislation that would in some or in all cases make the right of every physician to use narcotic drugs professionally contingent on permits issued by some federal officer duly authorized for that purpose.

In the opinion of your committee the matter of licensing physicians should be kept strictly within the jurisdiction of the several states. Your committee recommends, therefore, that the several constituent associations take up with the medical licensing boards of their respective states the matter of disciplinary action in cases such as those described, with a view to the adoption of such action in appropriate cases, and that the constituent associations seek such further legislation, if any, as may be necessary to permit the accomplishment of that end."

SECRETARY MCBRAYER: That is supposed to be adopted in our state. Dr. Johnson referred to 65,000 half grain morphine tablets being purchased by one doctor in six months. In our state one doctor in a period of 18

months purchased 16,000 half grain tablets and 5,500 quarter grain tablets. I saw some of the correspondence. Dr. Woodard showed it to me. He said they really mean business and that if the state did not take more drastic action in disciplining these measures the Bureau of Narcotics would take it over. I wasn't able to do anything about it.

DR. LAWRENCE: Just what did he mean by the State taking it over?

DR. JOHNSON: Tighten up.

DR. LAWRENCE: It is not in federal jurisdiction to practice medicine in the State. What you mean is, we didn't deal with them in allowing them to continue to practice medicine in the State.

DR. JOHNSON: Yes.

SECRETARY MCBRAYER: You mean the U. S. Government would interfere with the practice of medicine in the State?

DR. JOHNSON: I gather that they showed a disposition to discipline members in accordance with the Narcotic Act.

DR. LAWRENCE: It would mean a considerable change, wouldn't it?

SECRETARY MCBRAYER: Would you mind to rest and let us discuss that particular thing?

DR. JOHNSON: No, sir.

SECRETARY MCBRAYER: I think the A. M. A. officials have been at outs with every examining board we have had on this subject, certainly for some time back and before the present board went in, a few months before, after they had been elected, a narcotic officer came into my office. I knew I hadn't been using any narcotics and giving them to anybody else. He introduced himself. He did not say what he wanted. I said, "Spit out whatever you have got." He said, "The A. M. A. suggested that I come in and talk to you about this matter." I admit I was surprised to see the names of some men on there and I know men that I hadn't suspected. I had seen them occasionally and they didn't seem to me to be using narcotics. They didn't have any symptoms that I recognized in passing them or meeting them and shaking hands with them.

I reported it to the board of examiners. I happened to know the secretary of the board. I had a long conversation with him and went over all these cases and that board did take action, just with whom, I don't know. They called these men in and went over the matter. Dr. Lawrence can explain that if he wants to, or he can leave it alone.

Now when Dr. Symington at Carthage was arrested for using narcotics—and he was arrested because Mrs. so and so's son was taking narcotics and she thought he was taking it from Dr. Symington—she got the narcotic men down there and arrested Dr. Symington. It turned out that Dr. Symington hadn't given the boy anything and some other man in town was giving him his narcotics. He had gone over these things with the Board of County Commissioners—the chairman of the board—and told them how annoying it was and asked them what to do about it. They

came in with the usual tale of course. They were going up to Greensboro. Even the narcotic men came in with that kind of cock and bull story and so to make a long story short they arrested him. They came in and one of them played the narcotic man about to die. He gave him one and a half or two grains and while he was giving it to him, the other man arrested him. The town got very much interested in the matter. The sheriff and Board of County Commissioners gave bond for them. Some of you may know that they have tried that same kind of thing on other people. When Dr. J. M. Manning was mayor of Durham and he couldn't get anybody to take care of narcotics, he finally did it himself. They came in there one night at ten o'clock and arrested him and wanted to put him in jail and he said, "Well, you are not going to put me in jail without allowing me to give bond." They said, "Ten thousand dollars." He didn't have anything but he could get it. They went down there to put him in jail. Of course he could give them a bond for five hundred thousand dollars. He had friends who could have given it if they had demanded it. The judge who was presiding when that case went to trial gave the narcotic men one of the most scathing abuses I have ever heard come from the bench.

Well, Dr. Symington went into court and submitted to the technical violation of the narcotic law; then he put witnesses on the stand. Dr Symington went on himself. A great many of the people of the county went on—the best people of Moore County. Dr. Reynolds went on the stand and testified that he was going to continue him as County Health Officer; and the judge finally fined him $500, and I believe required him to be put on parole for the next year or two.

They wrote me about this from the A. M. A. and I told them if he was guilty why didn't the judge send him to the penitentiary for ten years or three years. What did he want to put a little fine of $500 on him for? The judge evidently felt that he had no intention to violate the law, when he was doing it without receiving any remuneration when he would prefer not to do it. He placed a fine of $500. Now, I don't hesitate to say I resent the A. M. A. or any of the officials coming into our State who wish to take the license away from our people and I will probably tell them so the next time I am in Chicago.

This Dr. Woodard is one of the most lovable gentlemen you ever saw but he evidently has got warped on this particular idea and I just think it is going too far when they undertake to tell us what we will do and undertake to frighten us into it by telling us what the U. S. Government is going to do to us. I really do, and I couldn't let this go by without expressing my feelings in regard to the matter. Please understand that I am not casting any reflection on our delegate, Dr. Johnson.

Dr. Johnson: I do not take it personally.

Secretary McBrayer: I am sure you have been impressed in this report Dr. Johnson has been reading to you that we need the most

intelligent men we have in the House of Delegates of the A. M. A. We need some one who can talk to them and sometimes we have suffered because we haven't had them. No matter how good a man is and how he ought to be honored we should not elect him to represent us in the House of Delegates if he could not furnish back-bone in the A. M. A. as it is our duty to do. If Dr. Johnson will stop up his ears I will say further that he was made a member of one of the most important committees there, the committee on executive session. He is able to take care of himself there just the same as he is here and he don't have to have anybody to tell him when to go and when to come back and if he doesn't agree with somebody he can get on the floor and take care of himself. Now that is the kind of man that we need there. Dr. Lawrence knows it just as well as I do. We have been handicapped at times because of things coming up that ought to have been taken care of there and our delegates were not sufficiently familiar with the procedure to do it. A number of us, including Dr. Lawrence, tried to see that we were taken care of. Dr. Johnson was into that too. I am referring to the destruction of our two-year medical schools and if I had been a soldier in the War Between the States, I couldn't have talked much worse to a Yankee than I did to some of those folks. I told them where we were and where to get off and some things they had better not do. Anyway, the two-year medical schools are here and I'd like to take this opportunity to say that the matter isn't settled for all time. They had evidently at that time decided to put all the secondary schools with two years of medicine out of business and that is what they undertook to do and if it hadn't been for our two-year schools, they would have. I am not criticizing the A. M. A. They are doing a wonderful piece of work up there and they have some of the best men there are in the United States hooked up working and they have got some that ought not to be there but that doesn't alter the case that they have got any right to sit up there and collaborate with the United States Government about bulldozing us about as to when we shall take a license away from a man. That is the way I feel about it. I feel that the most of these cases can be handled without too great an injury to the doctor.

I don't believe I mentioned to either one of you but while Dr. Ringer was president a couple of men from Dover, down near Newbern, were in the U. S. penitentiary—one of them died there and the other one died the other day—they wrote me about them and I took it up with the County Medical Society at Newbern and called their attention to it and asked them what they wanted to do about it. They said they didn't have any charges against them. I wrote back and reported it. Then I got another letter about it and I said, "We are not going to do anything about it as far as I am concerned. What I am going to do as Secretary unless the President tells me not to is when this year is out and his wife sends in the check for the dues for the year as she has been doing, I am just not going to accept the money and then he will be out and if that doesn't satisfy you,

you might come on down and see about it" and the reply was that that was one way of getting around it. I don't see why it wasn't just as satisfactory as raising a hullaballoo expelling a doctor for selling or taking narcotics.

I thank you gentlemen and Mr. President for bearing with me but I felt like this, hearing about these things.

I'd like for Dr. Lawrence to say whatever he feels like saying.

Dr. Lawrence: Mr. President and members of the Executive Committee, I hardly know just what the Secretary wants me to report. I might say for the benefit of the members present that this matter has been called to the attention of the members of the Examining Board at various times. This is by no means the first time we have heard from these fellows. It is a difficult situation to deal with and one that isn't at all pleasant to handle. In the first place if the Board of Examiners ever undertakes to take the license from all the men who have been guilty of violating the Harrison Narcotic Act you would have to court-martial hundreds of doctors, many of them, of course, unintentionally. Many of them are flagrant. I have a detailed report of this case on my desk and I have presented it to the Board of Medical Examiners. I did present it at Morehead City on the 11th. When one reads that report it looks like the man has used or caused to be used a pretty large amount of narcotics and one has difficulty in understanding why the Federal judge didn't send that man to the penitentiary if he is ever going to sentence anybody. I confess that I think the man is guilty of flagrant violation of the Harrison Narcotic Act. It winds up in the final chapter by the State Health Officer, a fine physician in North Carolina, saying if he is acquitted he feels justified in keeping him as County Health Officer in Moore County. Thereupon the Federal judge charged with dealing with the matter and clothed with more authority than anybody in the State, fined him $500. Now I submit to you the question as to whether or not you would have us proceed to revoke a man's license when a Federal judge with all the facts in front of him refuses to sentence him and the State Health Officer says he is going to keep him.

On the other side, some of the finest physicians in North Carolina have been caught asleep and their records are not in correct form and so they would be put out by these resolutions. Personally, I have no regard for the ones I know and what I say is not personal. I don't keep narcotics. I have a Federal license, number 178, because the law says I have got to have it. That is the extent of my using narcotics. I know some fine doctors in North Carolina who would not have a license if we even half way tried to carry out the law. Briefly, it is like this. We have discussed the matter by the hour. Largely it is a Federal problem and if the Federal judges don't see fit to sentence these men, or very few of them, that we have elected not to deal with those doctors other than the ones that have been sentenced to the prison.

The Secretary just referred to two doctors who were sentenced three times and paroled before they went to Leavenworth. That was the status when I became Secretary of this Board. They did go about the time I became Secretary of the Board of Examiners. As the doctor just said, they have gone to their reward. As stated before the Board of Examiners would make futile attempts, but as long as they were out of the State they couldn't do anything about it. You can't go from one state to another so we have waited until they came back to the State.

One man came back to Gaston County and we had him to appear three times before the body, looked into the case as carefully as we could, had a petition signed by a number of the finest citizens in Gaston County asking us to reprimand him and let him continue to practice. Guided by our best knowledge and belief we decided to pursue that course and we didn't revoke that man's license.

. . . I would resign from the Board of Medical Examiners before I would take their licenses away from them. If the A. M. A. wants to lose fellowship with them when they are in Leavenworth and return that is fine. That is all right.

I don't know what else we can do about it except to handle the most flagrant ones. I think our hands are tied fast. . .

I confess I don't know what to do with it. It's like telling a woman what to do with a drunken husband. I don't know what to do with him. One of the first things Dr. McConnell wrote me, marked with a red pencil, was not to waste time and effort revoking a man's license, but to spend my time trying to keep from licensing the wrong men.

Some of us promoted a bill in the Legislature that would give the Board of Examiners final appeal and we are going to deal with some of these fellows, if they come back. Some of them are going to die there. I don't think they need get so fussed up about it. They have got enough things they can dwell upon. I don't care much what they say about it. We get along with them the best we can.

President Strosnider: Gentlemen, I think it is time to adjourn for lunch.

. . . Adjourned. . .

President Strosnider: The meeting will please come to order. I will ask Dr. Johnson to take up the transactions of the A. M. A. and proceed with number 32, page 1915, paragraphs 2, 3, 4 and 5.

Dr. Johnson: That was the report of the Committee on Legislative Activities.

"We had a pleasant contact with medical associates in the Children's Bureau of the United States Department of Labor. These gentlemen were in charge of the Maternal and Child Health Service and the Services for Crippled Children. We had the pleasure of discussing the manner in which these activities should be organized in the different states. Because state

programs are acceptable to the Bureau after certain basic requirments have been met, there is, accordingly, considerable variance in the manner in which the work is directed. In fully half the states, the direction of the work rests with the state department of public health; in others, the departments of public health have held to the formula that public health service should in no way enter into the treatment of the individual. Here, departments of public welfare or other agencies have been set up for the administration of this activity.

The gentlemen with whom we talked are physicians of years of experience in private practice and gave evidence of a sympathetic point of view in considering the medical profession in the administration of this activity. They pointed out that the wording of the Social Security Act and the instruction of their superiors is to the effect that the medical profession shall under all circumstances be consulted, their wishes respected, and their coöperation sought.

It was made clear, however, that if the medical society of the state shows no interest or is unable to secure satisfactory state organization for the administration of the act, the Bureau representatives in Washington are unable to particularize sufficiently to solve medical problems which obviously must be handled locally.

These questions deserve our most careful consideration. We must coöperate to develop plans which will preserve all the rights of the private practice of medicine. The officials in charge of this work at present are in sympathy with our ideals. The wrong plan, however, based on a few unsound principles, could easily prove to be the opening wedge for further inroads on the private practice of medicine which would be difficult to stop."

Dr. Johnson: I think this is rather interesting.

Dr. McBrayer: Of course, you all know that the State Board of Health is taking care of that situation well and has completed sometime ago their coöperation with the Public Health Service.

Dr. Johnson: Number 33—Surgeon General Public Health Service (Page 1915, last two paragraphs).

"The Chairman of your committee had the pleasure of an interesting visit with the new head of the United States Public Health Service. This gentleman points to his record as a public servant in New York as indicative of his attitude toward the private practice of medicine.

He spoke of the tremendous responsibility involved in expending the huge sum of money which has been placed in his hands. He requested the coöperation of the medical profession and is apparently deeply interested that whatever activity may come about from the expenditure of this money will meet the approval of the leaders and members of the state medical societies."

Dr. Johnson: You may be interested to know that I heard Dr. Cary

talking to a group about that report, saying he put that in about Dr. Parran to put him on the spot. It has been rumored that he favored socialized medicine.

Number 34—Requirement of Membership in County and State Associations for Men Who Are on the Staffs of Hospitals. (Page 1916, second column.)

"Dr. G. Henry Mundt, Illinois, asked that Dr. W. D. Cutter, Secretary of the Council on Medical Education and Hospitals, be requested to address the House of Delegates with respect to the progress made in carrying out the provisions of a resolution adopted at the Cleveland session, which declared that members of approved hospital staffs should be members of component county and constituent state associations.

Dr. Cutter addressed the House, declaring that progress had been made in carrying out the purposes expressed in the resolution and explaining the difficulties that had been encountered. He expressed the opinion that it would require a considerable time to accomplish the desired ends but stated that the Council was in sympathy with the purposes of the resolution and would continue its efforts to secure the accomplishment of those purposes."

Secretary McBrayer: Were they just side-stepping or were they in earnest?

Dr. Johnson: They were in earnest, I think.

Next Number 36—Committee on Legislative Activities Reported in Regard to Unfair Charges in Rural Districts (Page 1919, second column).

"The report of the Committee on Legislative Activities in referring to the adequacy of medical service rendered in rural communities and charges for such services on a mileage fee basis states as follows: 'The subject of fees based on mileage requires further study. We believe there are inequalities due to conditions involving time and cost of transportation. It is recommended that each state and county society study this problem in its respective area in order that readjustments may be made that will relieve the profession as a whole from the implications of unfair charges in the rural districts.' Your committee recommends that the Bureau of Medical Economics of the American Medical Association be requested to prepare a brief statement based on the information obtained from the survey and studies now being conducted, this information to be forwarded to the secretaries of the constituent associations in such form that it may be printed in the state journals, or that if desired a sufficient number of copies be supplied so that they may be distributed to the component county societies."

Now Number 37—Sickness Insurance by the same Committee at the bottom of page 1919.

"Sickness insurance has been thoroughly discussed. Plans for the distribution of medical care to low income groups are being tried by various county societies. Large industrial interests have approached physicians and county medical societies with plans for the medical care of their employees.

Your Committee on Legislative Activities calls to the attention of the delegates, and through them to the attention of all constituent associations and component societies, the fact that the attitude and decision of the profession on this question are of utmost importance. It may readily be seen that the profession will lose its continuity of thought and action if its members vary from the principles which have been laid down to guide those active in bringing about contractural relations with any group."

And then they point out that in contracts between physicians or organized medical groups and employers or groups of employees the terms of contract are not based on income of the group but on the fact that they are in groups. That should be taken more into consideration. Groups employed only by the same employer are regarded eligible.

Number 38—Report of Committee on Occupational Diseases (Page 1920 top of page).

I have already read that.

Dr. Johnson: Gentlemen, there is just one more little item. Dr. McBrayer asked me to read over the section on page 1904 and see if there is anything I have to offer that we may use in our State Medical Society. For instance, I am interested in internal medicine and pediatrics. The A. M. A. has section meetings so well staggered that those doing work in allied specialties can attend both morning and afternoon sessions. We could arrange it so that we could have surgery and internal medicine in the morning and pediatrics in the afternoon.

That covers the report pretty well, I believe, except you may be interested that this change in precedent was established. The President-elect was not able to be installed. Tate Mason was fatally ill and was not able to come. The Judicial Council tried to offer a recommendation that the present President, Dr. McLester, continue for another year, or until the new man could be initiated. The recommendation of the Judicial Council was over-ruled and run over like a steam roller. Some one made a motion that Tate Mason be brought in for the installation but his physician said if they did that they would run the risk of installing a dead man—that he might not be living that night. They wanted him brought in so as not to break the precedent of not installing a man in absentia as president. However, he was installed in absentia and that meant that the vice-president or the man elected vice-president would really become president and so Dr. Charles Gordon Heyd, of New York, was made vice-president.

President Strosnider: I am going to ask Dr. Lawrence at this time to tell us how we can be of greater assistance between now and the meeting of the coming Legislature.

Dr. Lawrence: I just want to take this opportunity to thank every member of this committee and other members throughout the State for their splendid coöperation. In spite of some of us feeling blue, I personally feel that we are closer to the Legislature and that we are just about to accomplish or are in the act of accomplishing more for our profession than we have for a good many years and my only suggestion is that they continue to keep in close touch with their representatives and that they urge certain members of the profession who are in close touch with a given Senator or Representative to keep a finger on his pulse. In the near future I am going to have on my desk a complete roster of every member of the Senate and House and where he is politically. I could tell you a great many now but I want the complete list.

President Strosnider: Has any member of the Committee anything to bring before the meeting at this time?

Dr. Mitchell: There is something I'd like to say before you adjourn about the flagrant violation of the Harrison Narcotic law. My views are possibly out of tune with the majority. Nevertheless, I think it has sufficient foundation and sympathy to warrant that my opinion is worth expressing. I know that in our position before the Legislature we have a reputation of sticking together, whether right or wrong. That may sound good in terms of loyalty but it is unsound just the same. So I would like to sound a note in order to balance the one side expressed before this Committee. I can easily understand the A. M. A. saying that the standing of the A. M. A. was impaired by the presence of the names of convicted criminals for violation of the narcotic law being in our register in good standing. The standing of the North Carolina Medical Society and the medical profession of North Carolina is impaired before the public in general because we, in our effort to be loyal to each other, give more protection to those people who have violated the law than they think we should. I am in sympathy with the members. We feel that most of them, when the extenuating circumstances are considered, are unintentional violators and that their licenses should not be taken away from them. A great many of the forms we are called upon to subscribe to, such as stopping at the railroad crossing, because the sign is there, we don't obey. Yet civilization advances with beautiful myths like Santa Claus. I'd like to sound a note that we don't disregard the public attitude. We need to give a little more consideration to the other side of the matter than has been given.

Secretary McBrayer: I thought Dr. Brownsberger felt somewhat the same way.

Dr. Brownsberger: I do feel that there are always two sides to every question and I did not feel that the men who talked this morning felt as though there should not be some questions and Dr. Lawrence told us there were.

DR. LAWRENCE: We have had those men up and on one man held suspended license for 18 months. Finally on the request of the Gaston County Medical Society and other prominent citizens we did then reinstate the man. That particular man had served a part of a sentence in Atlanta. We now have under consideration a man in Leavenworth. Other than that we have no matters on the table at the present. There is a man who has been before us for repeated drunkenness. We suspended license for 9 months. Then we have a recommendation from the Solicitor and influential citizens from his community urging that we let him have his license. It is awfully difficult to make our position clear unless you sit in on the meetings and see how things go.

DR. BROWNSBERGER: That was the way I felt was the position of the Board and I am the last one to criticize the Board for any action.

DR. LAWRENCE: It is certainly the privilege and duty of this Committee to make any recommendation to the Board. I realize our Committee has no legal authority though the Board of Examiners would listen carefully if they see fit to pass any resolution.

DR. BROWNSBERGER: We must realize that the general public looks to us to take care of those members of our profession who do not live up to the high standards that we stand for as a profession and we must realize that on us lies that responsibility and we must not fail to fulfill that responsibility. I do not think it would be wise for us to ignore such recommendation and if such a recommendation is made by the American Medical Association I would hate to have it intimated or even whispered around that we were taking such a stand. I make a motion to recommend to the Board that they study the recommendations that were passed by the American Medical Association and give them consideration.

DR. PAGE: Mr. Chairman, I listened carefully to that motion to see how demanding it was on the Board of Examiners as to what steps they take. It was as clearly put and binding as I thought it was going to be. I think it would be the height of folly to get a very superficial point of view and nothing whatever on the inside of these narcotic cases and for us to recommend anything whatever as to what they do when they, themselves, have the opportunity to get information and reason over it hour after hour and are ten times better fitted to judge what should be done and I move that we have nothing whatever to do with it and leave it to them.

. . . The amended motion voted and carried. . .

DR. JOHNSON: Mr. President, I was requested to bring up a matter The background of it is that three years ago I was chairman of a Public Relations Committee and offered a resolution about advertising. Since then I have had a good many requests from doctors, particularly Duke university, to pass on points of propriety. One of these came up the ninth of June and is as follows:

"Dear Dr. Johnson:

Mrs. J. H. Martin, who is professor of dietetics here, and also President of the North Carolina Dietetic Association, has just shown me a collection of about a hundred diet lists which she and the members of the North Carolina Dietetic Association have compiled and wish to have published as a booklet for sale to anyone interested.

She is anxious to know whether such a book should have the approval of the State Medical Society before it is offered for sale. I believe that the booklet would be very useful and that many physicians may use it.

Yours sincerely,

WILBURT C. DAVISON,

Dean of School of Medicine, Duke University."

DR. JOHNSON: I wrote Dr. Davison that I could see no objection to such a manual being published. I was sure there could be no ethical objection to it.

Then Mrs. Martin wrote me that she wanted the approval of the Medical Society on this manual. I told her I would bring the question up at this meeting. She sent me the dietetic lists here and I don't see anything objectionable to them—just standard dietetic lists. One minor criticism is that she gives a good deal of space to dieting typhoid fever. On the whole, I don't see anything one could object to. It is compiled by her and the North Carolina Dietetic Association and is supposed to be published by the Duke University Press and sponsored by the North Carolina Dietetic Association. Frankly, I don't know whether we should go on record as approving it.

DR. LAWRENCE: Dr. Johnson, what is your conception of what she is driving at about it?

SECRETARY MCBRAYER: Does she want to sell it to the doctors?

DR. JOHNSON: Frankly, I rather gathered that.

DR. LAWRENCE: Do you feel that we ought to take any action on it?

DR. BROWNSBERGER: Isn't there a Committee with the American Medical Association that passes on those things?

DR. JOHNSON: They have a committee that would probably come under—the Public Relations Committee.

DR. MITCHELL: I move that the author of the manual be sent a communication stating first that we find nothing to prevent its publication; and second, that we find nothing in it that makes us feel like we need to take the position of recommending it either and that we take no official recognition of it.

DR. TERRY: Would this booklet go to doctors and nurses or to laymen?

DR. JOHNSON: I understood it was for doctors and nurses. I don't think it would be for laymen.

SECRETARY MCBRAYER: Would you use it any at all?

Doctor Johnson: I just bought a book on diets the other day that I like better than this. Frankly, I don't see why it is up to us to approve or disapprove it. I don't think we can object to it.

Dr. Mitchell: What they want is the same thing as the orthopedic people wanted. They went into the thing in great detail one morning about orthopedic clinics and took two or three hours of our time. Two or three of us decided it looked like it was helping them to advertise the clinics. Some one said, "Will you make such a motion?" I moved that they have them and we would come if we could. This is the same sort of thing.

Dr. Page: Are we prepared to prevent its publication? We say we find nothing to prevent its publication. Do we have the authority to prevent its publication?

Dr. Mitchell: I'll make another motion: The Executive Committee finds nothing in the publication to require its official attention.

Dr. Terry: Mr. President, I'd like to offer an amendment to that motion and say that we take no action on it at all.

. . . Amendment was not seconded. Vote taken on Dr. Mitchell's motion and carried. . .

. . . Dr. Johnson was authorized to notify them. . .

President Strosnider: Has anybody else anything to bring before the Committee?

Secretary McBrayer: I just wondered if Dr. Anderson didn't want to say something.

. . . Dr. Anderson indicates that he does not. . .

President Strosnider: Dr. Woodard, you have been very quiet today. Dr. Martin?

Dr. Martin: To me it is an opportunity and a privilege to come here and attend your meeting. I further would like to say as an official of the North Carolina Hospital Association that it will be our privilege to work with the Medical Society in any way we can for the betterment of the doctors and hospitals of North Carolina.

President Strosnider: Gentlemen, I want to thank you for coming out and for your patience in this long-drawn-out program. I felt that it was business that needed your attention. It is a duty given us by the House of Delegates.

As I stated at the opening of the meeting the boys from the east felt that we should like to return some of the calls from the west, and as one of the boys from the east, I am delighted that we have had the pleasure of meeting in such a beautiful spot. I appreciate the fact that so many of you have come out and I want to say to Dr. Martin that we should be glad to have him come to the Executive Committee meetings and note the volume of work this body does, not only here but back in the districts. For the past five or six years I have just noticed this Society going forward

by leaps and bounds. I feel it is due to the hard work of the Secretary-Treasurer and to the members of this Committee and I trust that we will carry on and keep up our zeal and enthusiasm that the work of the North Carolina Medical Society may go forward in its progress and that we may solve the problems as they arise and solve them satisfactorily to the public and to the profession to which we belong.

. . . Adjournment. . .

MINUTES EXECUTIVE COMMITTEE
MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

SIR WALTER HOTEL, RALEIGH
January 15, 1937

The meeting of the Executive Committee held at the Sir Walter Hotel, Raleigh, Friday, January 15, 1937, was called to order by President Strosnider at 10:45 a. m.

The following were present:

President ..... Dr. C. F. Strosnider
President-elect ..... Dr. Wingate M. Johnson
First Vice-President ..... Dr. C. A. Woodward
Second Vice-President ..... Dr. John F. Brownsberger
Secretary-Treasurer ..... Dr. L. B. McBrayer

COUNCILORS

First District ..... Dr. C. B. Williams
Second District ..... Dr. K. B. Pace
Fourth District ..... Dr. E. S. Boice
Sixth District ..... Dr. Wm. M. Coppridge
Seventh District ..... Dr. Forrest M. Houser
Eighth District ..... Dr. R. C. Mitchell
Ninth District ..... Dr. J. B. Terry
Tenth District ..... Dr. G. W. Murphy
Chairman Committee on Legislation ..... Dr. Ben. J. Lawrence
State Health Officer ..... Dr. Carl V. Reynolds

President Strosnider addressed the meeting at considerable length on the subject of the Social Security Act with special reference to the practice of medicine and the apparent impending legislation that may be brought up in Congress, at the close of which he made the following suggestions:

First: Let us see that every man practicing medicine in our county is a member of our county medical society.

Second: Let us make frequent contact with our county legislators to know what they are thinking about—let them know what we are thinking about in the best interest of the people whom they are elected to serve.

Third: Let us contact our congressmen and senators and keep them well acquainted with the service we are rendering the people, and what we need to make our service more universal.

Fourth: Let the members of our profession take an active part in the community life—social, economical and political.

Fifth: We as medical men should plan and take care of all the medical and surgical needs of our people. If there is too much charity, let us arrange with our county commissioners to assist us financially as did the federal government some time back.

Sixth: If number five is taken care of and the people are educated fully about sickness insurance and sickness benefits the social workers and philanthropists will have their chief topic of conversation taken care of. It is *sickness insurance and sickness benefits* that the National Social Security Board is now studying; and, it is this subject that every doctor in North Carolina and our nation must inform himself or herself in regard to, in order that he may discuss the same intelligently with our congressmen and senators without delay. You can get literature on this subject from the American Medical Association.

Secretary of State Medical Society of North Carolina
Dear Dr. McBrayer:

Noting the gradual but apparently inevitable trend towards socialized or insurance control of medicine in this State, the Johnston County Medical Society wishes to go on record as being literally opposed to any such changes.

During the past few years we have seen the hospitalization insurance instituted. Upon first thought this would appear to be a good idea and if operated as its instigators doubtless planned would be a boon to hospitals. As a matter of fact we believe that the type of individual whom the hospitals would like to see have this insurance do not buy it. In other words the type of individual who has been accustomed to not paying his hospital bill does not buy the insurance; on the other hand the people who pay their bills buy the insurance and the hospital is not better off. No new development of any great consequence is ever presented fully developed, but the change takes place gradually step by step. So we believe socialized or insurance dominated medicine will take place. The hospitalization insurance plan is, we believe, the first step towards this undesired condition.

In recent months we have had brought to our attention a plan of insurance offered by a company located in Raleigh which proposes to pay doctors' bills up to a specified maximum.

Within the past week we have also been informed of a Tennessee insurance company whose policy is sold to a group of mill workers, proposing to pay hospital and surgeons' fees as well as obstetrical cases according to a fee schedule which is far below the usual prices for such work.

In all this we seem to see a scheme of having the majority of the population under such insurance in which the doctors' fees will be autocratically stated by insurance companies. The doctors being more or less under the domination of the companies who are in the business for their own financial gain at the expense of the physician.

In addition to this there looms the picture of endless reports and forms to be filled out for the insurance companies entailing a burdensome amount of secretarial work to harass and further burden the already hard worked physician.

Being of this opinion we wish to go on record as being unalterably opposed to any tendency towards either socialized or insurance dominated medicine.

We furthermore urge that the State Society make every effort possible to combat and prevent the spread of insurance medicine.

(Copy to Secretary of State Medical Society of N. C.)
(Copy to President of State Medical Society of N. C.)

January 6, 1937.

To the Secretary of County Medical Society:

The Committee on Public Health and Legislation of the Buncombe County Medical Society has written a letter, a copy of which is enclosed, to Senators Josiah W. Bailey and Robert R. Reynolds and Congressman Zebulon Weaver.

We feel that as much pressure as possible should be brought to bear upon our representatives in this matter of any impending amendment to the Social Security Act with reference to the introduction of socialized medicine into the scheme of things. Will you not, at your earliest opportunity, read this letter before your County Society and see whether the members thereof are not impelled to join with us in writing not an identical but a similar letter to our representatives? We feel that such concerted action all over the State will have a great deal of effect upon the attitude of our representatives, whereas a few scattered letters would probably do little if any good.

It is important, in our opinion, that action on this matter be taken at the very earliest opportunity for, as you will note in our letter to our representatives we state that we have reliable information that an attempt is going to be made to pass a bill quickly before any concerted opposition has had time to form.

Very truly yours,

Enc.

Committee on Public Health and Legislation
of the Buncombe County Medical Society,

Paul H. Ringer, *Chairman*,
G. Farrar Parker,
Robert A. White,
John T. Saunders.

Dr. McBrayer advised before he had received the Johnston and Buncombe County Medical Societies resolutions he had written Senator Bailey and Dr. Wm. C. Woodward, Director of the Bureau of Legal Medicine and Legislation of the A. M. A., and each of these replied saying they knew of nothing at the present time that was being done toward any amendments that would affect the medical profession and Dr. Woodward still thinks the President has no intention of doing so.

Dr. McBrayer further stated: The Social Security Board has undertaken the study through a committee, of health insurance, and I suspect that has been set in motion perhaps since the letter from Dr. Woodward. The trouble with the U. S. Government in regard to such things is that the President is inclined to take the reports made by sociologists, in preference, and give no concern whatever to the medical profession. At least he has that attitude and I do not want to give the impression that I am in any way belittling the administration.

Dr. Murphy, Dr. Mitchell, Dr. Coppridge and Dr. Lawrence discussed the matter to some extent after which Dr. Houser made the following motion: That the Executive Committee go on record as approving the suggestions made by our President this morning and resolution sent down by Buncombe County Medical Society, and that the President appoint a committee to take care of this matter for us. That all this information be included in a letter and sent to each county medical society, they to take it up immediately with their members and send any suggestions they have back to this committee. Motion adopted unanimously.

Dr. Johnson made the suggestion that it was his opinion we should go slow on anything that is embracing socialized medicine for the reason that the A. M. A. had already taken a distinct stand on the matter and we could not afford to start anything contrary to what had been agreed on by the House of Delegates A. M. A.

Dr. Strosnider suggested that our Secretary be made secretary of this committee so as to keep the thing moving and report ready to submit to this body.

Wingate M. Johnson, M.D., Chairman ..... Winston-Salem
L. B. McBrayer, M.D., Secretary ..... Southern Pines
Paul H. Ringer, M.D. ..... Asheville
W. C. Bostic, M.D. ..... Forest City
T. G. Upchurch, M.D. ..... Smithfield
Benj. J. Lawrence, M.D. ..... Raleigh
Paul F. Whitaker, M.D. ..... Kinston
M. P. Whichard, M.D. ..... Edenton
Thos. L. Carter, M.D. ..... Gatesville
F. M. Houser, M.D. ..... Cherryville
D. W. Holt, M.D. ..... Greensboro
Geo. L. Carrington, M.D. ..... Burlington

Dr. Murphy moved that each county society be requested to appoint a committee whose function would be to consider this matter of social insurance as it effects the medical profession and report to the state-wide committee previously provided for. Motion passed.

Dr. Carl V. Reynolds presented Resolutions of the Illinois State Medical Society as follows:

RESOLUTION approved by the Council of the Illinois State Medical Society, Peoria, Illinois, January 4, 1937.

WHEREAS, information has reached the officers of the Illinois State Medical Society to the effect that influences at Washington are at work to divorce the United States Public Health Service from the Treasury Department and make it a bureau in a proposed Department of Public Welfare of the National Government; and

WHEREAS, such a change in the administration of public health service on the part of the National Government would tend to cause the several states to convert their health departments into bureaus of the Departments of Public Welfare; and

WHEREAS, Public Health Service, being preventive in character, conflicts so radically with public welfare service, which is curative and corrective in character, that a single administrative head would not be able to develop the most advantageous policies and programs in the two separate fields of activities; and

WHEREAS, Public Welfare Departments are already so overburdened with responsibilities that the addition of a function so great, actually and potentially, as that of preventive medicine would tend to defeat the purpose of departmental machinery; and

WHEREAS, the highly scientific and technical nature of preventive medicine make imperative to the best interest of the people a public health service administered by an executive trained in medicine; and

WHEREAS, other national governments of longer experience than ours, particularly the British, have found it wise to create and maintain a Ministry of Health; and

WHEREAS, The United States Public Health Service as a bureau of the Treasury Department, which exercises only budgetary supervision over its activities, has functioned in a universally satisfactory and efficient manner; and

WHEREAS, public health service in all its ramifications promises to become a major activity of governmental agencies; now, therefore, be it

RESOLVED that the Council of the Illinois State Medical Society in regular session assembled, vigorously opposes the proposal of making the United States Public Health Service a bureau in the National Government other than in the Treasury Department; and be it further

RESOLVED that the Society strongly recommends in the event of any reorganizing process affecting the United States Public Health Service,

the creation of a Department of Public Health in the National Government to include all activities in the field of preventive medicine now performed by the various departments; and

RESOLVED that copies of this preamble and these resolutions be transmitted to the President of the United States, to each Senator and Representative in Congress, to the Surgeon General of the United States Public Health Service, to the State Director of Public Health in each of the several states, to the secretaries of all state medical societies, and to each county medical society secretary in the State of Illinois.

Dr. Lawrence made a motion that we endorse the resolutions of the Illinois State Medical Society which was seconded by Dr. McBrayer and unanimously passed.

Dr. Reynolds then presented the report of the Committee for the Control of Syphilis appointed by Dr. Strosnider at the request of Dr. Thomas Parran, Jr., Surgeon General, U. S. P. H. S.:

REPORT OF MEETING OF SPECIAL COMMITTEE ON VENEREAL DISEASE CONTROL

DECEMBER, 14, 1936, RALEIGH, N. C.

A meeting of the Special Committee on Venereal Disease Control, appointed by Dr. C. F. Strosnider, President of the North Carolina Medical Society, at the request of Dr. Thomas A. Parran, Jr., Surgeon General of the U. S. Public Health Service, was called for 10:30 A. M., December 14, 1936, at the State Board of Health Building, Raleigh, N. C.

Those present at the meeting were: Dr. Louis C. Skinner, Dr. Sydney Smith, proxy for Dr. Hamilton W. McKay of Charlotte, members of the Committee, and Dr. J. C. Knox, Chairman of the Committee, and also Dr. John H. Hamilton, Director of the State Laboratory of Hygiene.

The meeting was called to order by Dr. Knox, the Chairman, who explained its purpose. A general discussion of each of the questions suggested for solution, followed. The Committee's conclusions and recommendations are summarized, briefly, as follows:

1. THE SYSTEM OF NOTIFICATION MOST SUITABLE TO PHYSICIANS, PATIENTS AND HEALTH AGENCIES.

It was explained that the present system of reporting in North Carolina is by report card, giving either the name or number of patient; if number is given a corresponding number is kept in the physician's office as a means of identifying the patient by name, if necessary. The Committee considers this a satisfactory method of reporting the venereal diseases.

2. THE ADDITIONAL LABORATORY FACILITIES NEEDED FOR DIAGNOSIS OF SYPHILIS.

The Committee agrees that additional laboratory facilities are definitely needed for the diagnosis of syphilis. At the present time the facilities

at the State Laboratory of Hygiene for serologic tests for syphilis are taxed to capacity. Approximately 140,000 specimens for Wassermann tests will be submitted to the Laboratory during the year 1936. Limitation as to the number of specimens submitted by physicians and health officer of the State has existed during the year. Doctor Hamilton, Director of the Laboratory, feels that the diagnostic facilities of the Laboratory are primarily for the use of the practicing physician and he has discouraged surveys for determining the prevalence of syphilis conducted by health officers and industrial groups throughout the State. Doctor Hamilton advocates the more widespread use of the delayed dark-field examination of chancre serum, which consumes considerably less time and requires less technical facilities than other tests. He stressed the value of this test in early cases of syphilis and said he felt it was the most positive test for syphilis in use at this time. Specimen outfits composed of capillary tubes and mailing containers are available through the Laboratory.

It was further brought out that in order to increase facilities for diagnosis of syphilis that local laboratory personnel of the various health departments, in addition to the dark-field examination, should do presumptive diagnostic precipitin tests, probably the Klein test. He felt that this would lessen the burden of work placed upon the Central Laboratory.

3. The Policy Recommended in the Distribution of Antisyphilitic Drugs.

The Committee feels that antisyphilitic drugs should be distributed to clinics treating syphilitics of the indigent class without cost to the clinic. There was also recommended a distribution of drugs through the Laboratory to the private physician for the treatment of his private cases upon the same basis as now in use, that is, at approximate cost.

4. The Adequacy of Free Treatment Facilities for Those Who Cannot Pay Physician's Fees.

The Committee feels that adequate treatment facilities should be provided to those unable to pay a physician's fee for private treatment.

5. The Nature and Extent of the Additional Facilities Needed.

The Committee recommends that such facilities be in the nature of clinics established in the counties and communities where they do not now exist. The Committee feels that physicians should be compensated in some way for their services at these clinics.

6. The Physician's Part in the Application of Epidemiologic Methods for the Control of Syphilis.

The Committee suggests that the coöperation of the practicing physician be in the nature of education of his patient to the necessity for divulging contacts and persuading them to be treated. An objection was raised to the physicians taking a very active part in such a program unless all physicians who treat syphilis could be relied upon to practice the

same procedure; in other words, it is felt that a physician might discourage private patients from taking treatment from him if he made too strenuous an effort to follow up these cases from an epidemiological standpoint. That also would be true, it is felt, if he reported lapses in treatment by the patient to the health department, which would result in epidemiological investigations.

7. The Possibility of Developing Minimum Standards of Treatment for Early Syphilis.

The Committee was in entire accord with the necessity for developing minimum standards of treatment. They felt that much could be accomplished by an educational program, impressing upon the layman the necessity for adequate treatment, and also that the physicians who engage in the treatment of syphilis should be acquainted with the newer methods of treatment including actual treatment procedures and drugs used. It was suggested by the Committee that each county medical society each year have someone address the society on the problem of syphilis control.

8. The Availability of Hospital Beds for Treatment of Cases Needing Hospitalization.

Although there are now a number of hospital beds available for the treatment of cases of syphilis needing hospitalization in certain communities, the Committee feels that an effort should be made to secure hospital beds for all cases in all communities in need of such facilities.

9. Methods for the More Adequate Prevention of Congenital Syphilis Through Recognizing and Treating the Disease Among Pregnant Women.

The Committee commends the action of the Division of Preventive Medicine of the State Board of Health for its activities in the establishment of prenatal clinics and for its educational work dealing with this phase of public health and the Committee recommends an extension of this service wherever needed.

10. The Lines Along Which Informative and Educational Programs Should Be Conducted.

The Committee feels that educational programs designed primarily for lay groups should be conducted through newspaper articles dealing with prevalence of syphilis and the necessity for control measures. It was advocated that each county medical society set aside one of their regular meetings for a discussion of this important problem. Commendation of a recent article by the Surgeon General, Dr. Thomas Parran, Jr., which appeared in the *Reader's Digest,* was unanimous. The Committee feels that information of this type probably could be best released through the State Health Department to its local health units in the form of newspaper articles.

11. The Possibilities of Prophylactic Measures Being Taught and Administered Through Physicians' Offices, Out-Patient Hospital Services and Clinics, with the Thoroughness and Precautions Governing Army and Navy Procedures.

The Committee feels that physicians treating cases of syphilis should instruct their patients on prophylaxis with the hope of the patients influencing those not already infected to take these necessary precautions. It was felt that probably this should be limited to the following methods: thorough cleansing with soap and water, or the use of some mechanical device for protection. The Committee believes that probably the chemical prophylaxis would require too much effort on the part of the physician and with too little result in the ultimate control of the disease.

In addition to the foregoing points, the law and the rules and regulations now existing in this State for the control of the venereal diseases, were discussed. The Committee, after examining the present law and rules and regulations, agreed that the law as it is now written is adequate but the rules and regulations should be revised and made to conform with the law.

Respectfully submitted,

Sidney Smith,
L. C. Skinner,
J. C. Knox, *Chairman.*

Dr. Mitchell made a motion that the report be accepted, seconded by Dr. Brownsberger, which was adopted unanimously.

Dr. McBrayer presented the matter of the arrangement of the program for the meeting at Winston-Salem, May 3, 4, 5. It seemed to be the consensus of opinion that the program be constructed along the same lines as previously.

Dr. McBrayer also presented the matter of a feature story published in the papers by Duke University playing up some special work which had been taken cognizance of by the State Board of Medical Examiners and they had referred it to the Council of which Dr. Wingate Johnson, president-elect, is president. Dr. Strosnider recommended that Dr. Johnson make report of this at the next meeting.

Dr. Lawrence suggested on account of the full program to be considered by the House of Delegates at the next meeting, that they meet Monday afternoon and Monday evening instead of just Monday evening. Motion made by Dr. Coppridge that the matter be left to the discretion of the President and Secretary, which was unanimously approved.

Dr. Lawrence presented the matter of legislation reported to the previous meeting of the Executive Committee by Dr. Bostic and stated Dr. Bostic had referred the matter to the Governor and that the Governor had stressed this in his inaugural address but did not specify any bill.

Dr. McBrayer stated he had the pleasure of attending the Wake County Medical Society last night and they had up for discussion the matter of third and fourth year medical school and that a motion was made that he bring the matter to the attention of the Executive Committee today with the request that if they in their wisdom see fit, they approve the idea of a third and fourth year medical school in this State which would be supposed to take care of the two-year medical schools we have at this time, and that he was reliably informed that all two-year schools in the State and other states will be put out of business within no specified time but before a great while.

Dr. McBrayer advised the information he had was confidential at the time it was given him but that was the intention of the Committee on Hospitals and Medical Schools and was the intention when we had the row when they notified our two two-year medicals schools in this State to shut up, so it is a matter of adding the third and fourth year in one way or another or doing away with the two-year schools, and in order to bring the thing before the Executive Committee I am going to offer the motion that the Executive Committee of the Medical Society of the State of North Carolina approve the establishment of the third and fourth year medical school and that the President be authorized to appoint a state-wide committee to help further the idea at such time as may seem wise to him. Motion seconded by Dr. Johnson.

Dr. Lawrence, Dr. Williams, Dr. Brownsberger, Dr. Johnson and Dr. Reynolds discussed the matter.

Dr. Strosnider stated we need an institution to take care of our boys and girls who want to study medicine and I want to go on record as favoring the third and fourth year medical school. Motion unanimously carried.

Committee appointed by Dr. Strosnider as follows: Dr. C. F. Strosnider, Dr. Wingate M. Johnson, Dr. L. B. McBrayer, Dr. P. P. McCain, Dr. James W. Vernon, Dr. T. W. M. Long, Dr. Wm. M. Coppridge, Dr. K. B. Pace, Dr. W. D. James, Dr. Hamilton W. McKay, Dr. James W. MacConnell, Dr. Z. M. Caveness, Dr. Benj. J. Lawrence, Dr. Hubert B. Haywood, Dr. S. D. Craig, Dr. Josh Tayloe, Dr. Thurman D. Kitchin, Dr. C. C. Carpenter, Dr. Wm. deB. MacNider, Dr. C. S. Mangum, Jno. Sprunt Hill, Reuben Robertson, Sen. A. Hall Johnson, Sen. J. W. Noell, Sen. Ed Flanagan, Sen. L. Y. Ballentine, Odus M. Mull, Rep. Ernest Gardner, Rep. Sam M. Blount, Atty. J. Melville Broughton, Rep. Geo. Uzzell, Col. J. W. Harrelson, D. L. Ward, Walter Murphy, Dr. J. F. Highsmith.

Dr. Brownsberger stated in the Hospital Association meeting they were discussing the problem of the indigent accident cases of those injured in automobile accidents and the increasing burden to the doctors and the hospitals, especially the hospitals and he and Dr. Murphy were asked to see if there was any possibility or feasibility of any apportionment of any of the present gas tax. He said they didn't know whether it had been tried

and failed or whether there was any possibility of it being put through, that they wanted some information. Dr. Murphy added that this plan is being followed in the State of Ohio and has been for years, that fifteen hundredths of one per cent of the gas tax is set aside.

Dr. Strosnider appointed Dr. Brownsberger a committee of one to obtain information on this subject and turn it over to Dr. Lawrence, Chairman of the Committee on Legislation.

Dr. Pace advised that the question is being asked in his District as to the necessity of requiring doctors at least one year of service as interne before beginning the practice of medicine. Two members of the County Board of Health, he said, requested that the County Medical Society ask the County Board of Health to make it compulsory for every child to be vaccinated for diphtheria.

No further business appearing, President Strosnider declared the meeting adjourned.

MINUTES EXECUTIVE COMMITTEE
MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

THE CAROLINA, PINEHURST, APRIL 5, 1937

The meeting of the Executive Committee held at The Carolina, Pinehurst, Monday, April 5, 1937, was called to order by President Strosnider at twelve noon.

The following were present:

President ..... Dr. C. F. Strosnider
President-elect ..... Dr. Wingate M. Johnson
First Vice-President ..... Dr. C. A. Woodard
Secretary-Treasurer ..... Dr. L. B. McBrayer

COUNCILLORS

Second District ..... Dr. K. B. Pace
Sixth District ..... Dr. W. M. Coppridge
Seventh District ..... Dr. Forest M. Houser
Eighth District ..... Dr. R. C. Mitchell
Ninth District ..... Dr. J. R. Terry
Chairman Committee on Legislation ..... Dr. Benj. J. Lawrence
Past President ..... Dr. P. P. McCain

Dr. McBrayer presented the set-up of the program for the coming Annual Meeting at Winston-Salem, also presented the audit for the year 1936.

Dr. Strosnider called on Dr. Lawrence for a report of the activities of the Committee on Medical Education. Dr. Lawrence at the close of his remarks asked permission to present his report in typewritten form, which was granted.

Dr. Pace made a suggestion that copies of the information submitted by Dr. Lawrence be mimeographed for distribution to the members of the Executive Committee and the members elected at the Annual Meeting at Winston-Salem.

Dr. Mitchell stated there had been confusion in regard to the term third and fourth year medical school and made a motion that reference to the third and fourth year medical school be dropped and that we deal only with the term "establishment of a four year medical school."

Dr. McBrayer advised that the name was so constructed that the four year medical means that the University if the University will allow us to or will do it for us and in clarifying discussions and resolutions passed we desire to change the records so as to show that the University is the one we are counting on to do it in connection with the present two year school, that not to mean however we would not be in favor of going to Winston or anywhere else if they put up the money for it. Motion seconded and unanimously passed.

Dr. Coppridge made a motion that the Executive Committee of the State Medical Society disapprove the establishment of any medical school in North Carolina other than a four year accredited medical school. Seconded by Dr. Mitchell and unanimously carried.

Dr. Lawrence presented some points from the Epstein Bill.

Dr. Pace made a motion that several of the main paragraphs of the Epstein Bill be mimeographed and copies sent to each county medical society for distribution to the members. Dr. Lawrence was of the opinion that the individual members should send direct to their Senator in Washington and secure complete copies.

Dr. Strosnider stated he had expected to have the Executive Committee as his guests at this meeting but as the Secretary had been ill it was thought unwise for him to make the trip to Goldsboro. He however extended an invitation to each one to visit him at his camp at Morehead City.

President Strosnider called on the Secretary for any remarks he cared to make.

Dr. McBrayer: "Friends, fellow-workers, as some of you know, I haven't been very well for the past eighteen months. I have improved a great deal lately and feel fine, thank you, but my son and Dr. McCain insist that I must stop working as hard as I have been and they may be right about it, and may be as we all make mistakes they may be mistaken, however, that is not supposed to be possible and some time or other it would become necessary to elect a new Secretary and it seems that probably this is the best time to do it and for that reason I desire to tender my resignation as Secretary-Treasurer of the Medical Society of the State of North Carolina."

Dr. McCain: Of course all of us know the way Dr. McBrayer is only willing to do things. I know I can say that he is not willing to do anything half-way and ever since he has been Secretary he has travelled from one end of the State to the other and to be Secretary the way he has been we also know it will shorten his life if he continues and the family is not willing for him to do it. We all know the Society will always have his interest and his support just the same when he retires as Secretary as they have had all these years and we hope on account of his health that you will accept his resignation and if he ever gets strong and vigorous again as we hope he will, I am quite sure he will be willing to serve.

Dr. Terry: I don't know whether to make a motion to accept Dr. McBrayer's resignation or not but we reluctantly accept his resignation. I further move that a committee of three be appointed to draw up suitable resolutions and at the same time I want to make a motion that we appoint Dr. L. B. McBrayer, Honorary Secretary of the Medical Society of the State of North Carolina and member of the Executive Committee for life, his resignation to be effective as his successor is elected and qualified.

Dr. Lawrence: I would like to second Dr. Terry's motion that we accept this resignation with reluctance and with deep regret that his health has reached a stage that made him feel that this is necessary. This action of Dr. McCain is concurred in by his family, those who love him closest, and I think it will be understood by those who love him most that it is done with the sole thought of lengthening his days with us and with his beloved family and of course when that is said, with the best interests of the Medical Society at heart. It would be difficult if not impossible for me certainly and I dare say for any member of this committee or any other committee to find words or phraseology that would adequately express our love and devotion to him; our deep sense of appreciation of his matchless character and sterling worth in service rendered to the Medical Society of the State of North Carolina, to its profession throughout the length and breadth of this entire State and through the profession to the commonwealth and its people as a whole. With a heart that is full up to my throat, and with a full understanding of the situation as it applies, I would like to second Dr. Terry's motion with the following amendment: namely, that Dr. McBrayer be made Honorary Secretary and Treasurer for life, and that this Honorary position carry full membership on the Executive Committee.

. . . Unanimously accepted. . .

Dr. Wingate Johnson, Dr. R. C. Mitchell, Dr. Forest M. Houser, Dr. W. M. Coppridge, Dr. K. B. Pace and President Strosnider paid glowing tribute to Dr. McBrayer.

Dr. Houser suggested that every member who had ever held office in the State would appreciate a testimonial dutch dinner for Dr. McBrayer and that we plan for such a dinner during our meeting at Winston-Salem.

Seconded by Dr. Lawrence and unanimously carried. President Strosnider appointed a special committee as follows: Dr. Houser, Dr. Wingate Johnson, Dr. Coppridge.

Dr. Lawrence made a motion that Dr. T. W. M. Long of Roanoke Rapids be placed in nomination for the position of Secretary-Treasurer. Seconded by Dr. Terry.

Dr. Coppridge suggested the name of Dr. McCain for Secretary-Treasurer. Dr. McCain stated it would be impossible for him to serve. Dr. Lawrence stated if Dr. McCain would accept this position he would withdraw his nomination. Dr. McCain stated it would be out of the question for him to accept as much as he appreciated the honor they had bestowed on him.

Dr. Mitchell made a motion that the nominations be closed, which was seconded and unanimously carried, and Dr. T. W. M. Long was unanimously elected.

Dr. Lawrence made a motion that Dr. Strosnider appoint a committee of two or more to wait on Dr. Long. Dr. Houser made a motion that the President select someone to act with him on this committee. The suggestion was made that Dr. Long be invited to receive this notification in the presence of Dr. McBrayer in his office at Southern Pines. Motion carried.

No further business appearing on motion adjourned.

Respectfully submitted,

L. B. McBrayer.

President Strosnider: We will now have the report of the Secretary-Treasurer, Dr. McBrayer.

Secretary-Treasurer Emeritus McBrayer: Mr. President and Gentlemen of the House of Delegates of the Medical Society of the State of North Carolina: The minutes of the Executive Committee are submitted herewith. I am just holding these up so that you can see the Committee have been at work.

. . . Secretary-Treasurer Emeritus McBrayer then presented his prepared report, making the following interpolation preceding the words, "I have enjoyed the work of the Secretary's office": Dr. Long didn't refuse to serve beyond this meeting, of course, but that was as far as the Executive Committee could go. . . (Applause)

ANNUAL REPORT OF THE SECRETARY-TREASURER

To the House of Delegates,
Medical Society of the State of North Carolina:

The Secretary hereby submits his annual report. We feel that the President's Address, the Committee on Legislation, the Finance and other committees will cover the work during the year and it is not necessary to have duplicates.

The Minutes of the Executive Committee are submitted herewith and become a part of this report. At the last meeting of the Executive Committee I submitted my resignation as Secretary to take effect as soon as my successor was elected and installed; the Executive Committee having authority ad interim, after much consideration elected Dr. T. W. M. Long Secretary and secured his consent to serve as may be needed until this meeting.

I have enjoyed the work of the Secretary's office and my close contact with the Fellows, and it has been a great pleasure to me to see the Society grow in numbers, in scientific work and in influence, and contacts with other organizations, political and otherwise. During the last year it has been a great pleasure to be so closely associated with President Strosnider. Some of the work done during the year is in my opinion more far reaching and of greater importance to our profession and our people than anything set in motion in many years. The President and the Chairman of various committees having this in hand will go into this matter more fully in their reports.

I would like to speak of the valuable work done by the Executive Committee and hundreds of others who have helped make the Society what it is but time forbids, however, I must put in the record the valuable and never ceasing work of the Chairman of our Legislative Committee Dr. Benj. J. Lawrence.

To my friends and co-workers let me say au revoir, but not goodbye.

L. B. McBrayer.

President Strosnider: Next is the report of the Finance Committee, Dr. Peery, Chairman.

Dr. Vance P. Peery: Mr. Chairman, Members of the House of Delegates: The Secretary and Treasurer's books were audited by Everett, Zane and Muse. A detailed audit is attached which will be a matter of record in your transactions.

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Southern Pines, N. C.

Cash Receipts and Disbursements

Exhibit A

Calendar Year of 1936

RECEIPTS	*Budget*	*Actual*	*Over or Under**
Dues	$12,000.00	$13,564.00	$1,564.00
Exhibit Space	500.00	596.91	96.91
Sundry:			326.64
Dividend, Page Trust Co.		294.64	
Sales of Transactions		5.00	
Overpayments		27.00	
Total Revenue Receipts	$12,500.00	$14,487.55	$1,987.55
Add:			
Bank Balance, Jan. 1, 1936	640.15	640.15	
Total Budgeted Receipts	$13,140.15	$15,127.70	$1,987.55
Note Discounted		1,000.00	1,000.00
TOTAL:	$13,140.15	$16,127.70	$2,987.55
DISBURSEMENTS			
See Exhibit B for Detail of Total Revenue Disbursements	$13,090.15	$10,677.78	$2,412.37*
Add:			
Bank Balance, Jan. 1, 1936:			
Current Account	50.00	449.92	399.92
Certificate of Deposit		5,000.00	5,000.00
TOTAL:	$13,140.15	$16,127.70	$2,987.55

Summary of Unapplied Cash Balances

Total Cash Balances, Dec. 31, 1936	$ 5,449.92	
Less, Note Payable	1,000.00	
Unapplied Cash		$4,449.92
Revenue Receipts Exceeded Budget Estimate	$ 1,987.55	
Revenue Disbursements Under Expended Budget	2,462.37	
Total as Per Above	$ 4,449.92	

Cash Disbursements

Exhibit B

January 1, 1936, to December 31, 1936

	Budget Appropriation	Actual Disbursement	Over or Under* Disbursed
Chairmen of Sections:			
Stationery	$ 50.00	$ 24.74	$ 25.26*
Councillor:			
Stationery	$ 50.00	$ 45.40	$ 4.60*
Travel	250.00	6.00	244.00*
Total	$ 300.00	$ 51.40	$ 248.60*
Legislative Committees:			
To Dr. B. J. Lawrence		$1,050.00	
To Cash		500.00	
Total	$3,140.15	$1,550.00	$1,590.15*
Other Committees (Expenses):			
Executive Committee		$ 647.93	
Other Committees		103.77	
Total	$1,000.00	$ 751.70	$ 248.30*
President's Office:			
Travel and Misc. Expenses	$ 400.00	$ 400.00	
Secretary's Office:			
Salary	$1,200.00	$1,200.00	
Clerical Assistance	1,000.00	1,011.00	$ 11.00
Stationery	100.00	33.48	66.52*
Rent	300.00	320.00	20.00
Travel Expenses	600.00	877.84	277.84
Auditing Books	50.00	25.00	25.00*
Miscellaneous and Emergency	950.00		141.07*
Postage, Telephone and Telegraph		180.94	
Janitor		61.00	
Supplies		139.45	
Flowers		20.60	
Safe		347.50	
Refunds and Returned Checks		57.00	
Express		2.44	
Total	$4,200.00	$4,276.25	$ 76.25
State Meeting:			
Expenses	$ 500.00	$ 228.56	$ 271.44*
A. M. A. Delegates	$ 200.00	$ 200.00	
Expense—Speaker of Meeting	50.00		50.00*
Transactions:			
Reporting and Prep. of Copy	$ 250.00	$ 239.20	$ 10.80*
Printing and Binding Material	3,000.00	2,955.93	44.07*
Total	$3,250.00	$3,195.13	$ 54.87*
Certificate of Deposit (See Bank Statement)			
Totals (To Exhibit A)	$13,090.15	$10,677.78	$2,412.37*

For the first time in years the treasury shows a healthy balance of $5,449.92. We, therefore, recommend that the dues be reduced to eight dollars per year.

That part admits of quite a bit of argument, and I pause right here to state that the Medical Society cannot get anything without paying for it. Being a member of the Finance Committee, and somewhat close to the finances of the Medical Society for the last three or four years, I can very easily visualize the time when the business of this Society can be perhaps served and amplified by raising those dues again. Any time anyone has any doubt as to how that money is expended, all you have to do is to refer to the transactions, where there is an itemized record of it.

We recommend that all committees be recompensed for actual travel expenses while engaged in the performance of necessary duties to the Society, that an accurate and itemized account be kept by them and submittd to the Secretary-Treasurer for payment.

We recommend that the Secretary-Treasurer be bonded for $10,000.

We recommend that the Executive Committee employ a lawyer and retain that lawyer to represent the Society, for an annual retainer fee not to exceed $1,000.

Briefly, for your information, the statement is as follows:

PROPOSED BUDGET OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

January 1, 1937, to December 31, 1937

Stationery—of all Officers Except Secretary	$ 100.00
Councellors Travel Expense	250.00
Legislative Committee	1,000.00
Executive Committee	650.00
Other Committees	250.00
President's Office:	
Travel expense	400.00
Secretary's Office:	
Salary	1,200.00
Clerical assistance	1,200.00
Stationery	100.00
Rent	300.00
Travel expense	600.00
Auditing books	50.00
Miscellaneous and Emergency	900.00
Postage	
Telephone and Telegraph	
Janitor and Supplies	
Flowers—Etc.	
Expenses of State Meeting	500.00
A. M. A. Delegates	200.00
Expense of Guest Speaker	100.00

TRANSACTIONS:		
Reporting and preparation of copy	250.00	
Printing and binding	3,000.00	
TOTAL	$11,050.00	
EXPECTED INCOME:		
1200 members at $8.00		$9,600.00
CASH BALANCE ON HAND		5,449.92
EXPECTED BALANCE		3,999.92

This makes a total of $11,050 for expenses. The expected income from 1200 members at $8.00 is $9,600.00, and the expected balance is $3,999.92.

The report is signed by Julian A. Moore, William Coppridge and Vance P. Peery.

PRESIDENT STROSNIDER: You have heard the report of the Finance Committee. What is your pleasure?

DR. J. W. DAVIS (Iredell-Alexander): Mr. President, I represent a County Medical Society that on three occasions has unanimously requested that the Society reduce the annual fee from $10 to $5, the reasons being that $5 is sufficient, and that quite a number of members are staying out because they think $10 is too much, although they are well able to pay it. They just feel that that is too much. We respectfully request that the Society give this consideration and reduce it to $5.

PRESIDENT STROSNIDER: Is there further discussion of this?

DR. DAVIS: I put that in the form of a motion.

PRESIDENT STROSNIDER: Is there a second to Dr. Davis' motion?

DR. CARL V. TYNER (Rockingham County): I second the motion.

DR. JULIAN A. MOORE (Buncombe County): Mr. Chairman, on the question of the amount of dues of the Society, I have been on this Finance Committee for a period of five years, I think, and the dues were raised to $10 some two years ago.

At that time, nobody knew what the actual expenses of the Society were or should be, but after two years we know what the actual expenses of the Society should be and are, and the Finance Committee knows that it cannot be run on $5 a year. However, we are sure that it can be run on $8 a year.

At the first opportunity we have had, we have recommended that those dues be reduced to $8. But, if they are reduced to $5, we will be back where we were four years ago—in debt, with everybody working at his own expense. I hope this House of Delegates will reason the thing out and not cut it down too low.

DR. A. C. MCCALL (Buncombe County): I second Dr. Moore's point.

DR. J. E. S. DAVIDSON (Mecklenburg County): I have never been on any Finance Committee. I have been a member of this State Society for a number of years. I don't say there hasn't been in times past, Mr.

Secretary, some money that was lost. I don't intimate that any money was squandered, but I do say, following the example of the great President of the United States today, Mr. Roosevelt, that things have to be reduced.

As far as my dues are concerned, gentlemen, I don't have to pay any. But I want to call your attention to thousands of doctors in North Carolina who are not members of this Society and who should be members. In fact, every doctor in North Carolina should be a member of his County Medical Society, thereby making him a member of this great State Medical Society of North Carolina.

You can't do it if you take the position that my county, Mecklenburg, has taken, and I want to tell this openly, and above-board, as a Mecklenburg man: that you have to belong to a library association, to a collecting association, which altogether costs perhaps $60, $70, or $80. If there is any delegate of Mecklenburg County present, and if I have the prices too high, I hope to God you will correct me, because I want to stick to the truth.

As I understand the Constitution of the State Medical Society, every plain, common practitioner in North Carolina who makes $700, $800, or $900 a year can become a member of this great Society. Therefore, you should never put the component Society fees up so high that the average man, the average doctor, can't pay them.

I, sir, most humbly submit to you that it takes money to run the State Society, and the component societies should pay their proportional parts. I wish to pause just one minute there: I want to pay my respects to the great and noble Secretary of this Society, Dr. L. B. McBrayer, whom I knew before I became gray-haired like Dr. Myers. At that time Dr. McBrayer was in the prime of life. He fought the battles and waged the war. But for him, you younger men would not be here.

I am not fighting the $10 fee. I think that is much more reasonable, in all ways more reasonable, than what we have in the Mecklenburg County Society, which gives such things as honorary fellowship and honorary membership in the County Medical Society and doesn't allow you a vote unless you pay $60, or $70 a year to that County Medical Society of which only $10 goes to the State Society.

I think $10 is a very reasonable price to the State Society when you take into consideration the copies of your transactions, the expenses of your Secretary.

I don't know. I will leave that to the Finance Committee. I hope to see the day when they, like President Roosevelt, can reduce fees fifteen per cent or twenty-five per cent.

Thank you, gentlemen.

President Strosnider: Let me get this matter straight. Dr. Moore, did you offer your motion as an amendment to Dr. Davis' motion, that the dues be made $8?

Dr. Moore: Dr. Davis' motion was to reduce it to $5.

Dr. McCall: I didn't understand that a motion was made to cut it to $5. Dr. Moore explained that $5 would not carry us through. As I understood Dr. Moore, he didn't make a motion that it be cut to $8. He merely informed us that $10 carried us a little over. We know, from past experience, that $5 brought us in the red. He merely suggested that we cut it to $8.

I make a motion that we try it for a year at $8. I feel like Dr. Moore does: that we are perhaps keeping some members out of our Society who should be in the Society when we have a $10 fee, because we also have our local societies to consider. I would like to move that the report of the Finance Committee be approved, carrying the recommendation cutting the dues to $8.

Dr. W. Houston Moore (New Hanover County): Gentlemen, it takes money to run anything, and you usually get about what you pay for. We have a Finance Committee. We have asked this Committee to work this out. If you are not going to take their advice, what is the use of having a Finance Committee? (Applause) They have told us they could run it for less than $10, but that it costs more than $5. Five dollars put us in the red, and $3 more added to it brings us out of the red and gives us a little surplus to work on, which we certainly need.

One of the gentlemen spoke about hundreds of doctors in North Carolina who are not members of the Society.

Secretary-Treasurer Emeritus McBrayer: We have 1417 members in good standing today.

Dr. W. Houston Moore: We had quite a number, equally as many, who were not members of the Society when the dues were $5. The extra $3 is not going to keep anybody out. We need a little surplus to work on, and I hope you gentlemen will bear that in mind. (Applause)

Dr. Tyner: I seconded Dr. Davis' motion for the reason that at our meeting about a month ago this question came up, and I was requested, as a delegate, to bring to the attention of the Society that a great number of our men, at least, were kicking on the amount of the annual dues.

Personally, I have a feeling that probably a good many of us don't know just why there was an increase. I have had that question asked me a dozen times, and frankly, I couldn't answer it. My personal feeling is, as the gentleman who just preceded me said, that the Finance Committee who have advised this thing should be in a much better position than any of the rest of us to make recommendations. We are only guessing. Some of us are growling because we don't know what it is all about.

If we could get across to the members of the Society why there has been an increase in the dues—and that can be done by a report of the Finance Committee—I don't think there will be any question but that the majority of the men will support it.

. . . There were calls for the question. . .

Dr. William M. Coppridge (Durham-Orange County): I would like to say a word about the dues because I was chairman of the Finance Committee at the time we recommended that the dues be raised to $10.

The reason we requested that they be raised to $10 was this, if you will remember: About three years ago we were writing to doctors throughout the State asking for donations to run the State Society because we didn't have money in the treasury to pay the ordinary, necessary expenses. Those who think that the dues ought to be $5 should remember that the transactions which are given to every member of the Society free every year cost more than $2.50 a volume. So if your dues are $5 and you continue to publish the transactions—some of you think that they are not necessary, but I dare say that this body would not vote to do away with the transactions—it means that the Society has to run on $2.50 a man and it can't be done. The President's traveling expenses would not be paid, the Secretary's office could not be run, and the work of the Society would not be transacted as it ought to be done.

We raised the dues to $10 and we got a surplus. Now they are recommending that it be dropped to $8. Frankly, I don't see how we can maintain any decent medical society on any less.

Nobody is going to stay out of this Society because of an additional $3 a year. We have more members at $10 than we had at $5. (Applause)

Dr. J. E. S. Davidson: Mr. Chairman—

President Strosnider: You spoke once.

Dr. Davidson: But I have a right to reply.

Some of the members misunderstood me. I never intended to convey the idea that the Finance Committee was incorrect in its suggestion. The only thing I did was to ask if they could possibly cut it so that we could have a larger membership. I am not saying that we would increase the membership if we did that. However, I do know that in certain counties you would increase your membership in the State Medical Society.

I am not at all opposed to the Finance Committee. Some of the members of the Finance Committee are sitting around so close but I can't call their names. They thought I was critcizing them. I am not, any more than I am criticizing the venerable Secretary. (Laughter)

. . . Call for the question. . .

Dr. J. B. Wright (Wake County): I want to amend Dr. Davis' motion that the dues be made $8.

Dr. John Q. Myers (Mecklenburg County): I second the motion.

President Strosnider: You have heard the amendment made and seconded that the dues be made $8 per annum, rather than $10, or $5.

Dr. McCall: Why is it an amendment? The recommendation is $8.

Dr. James W. Davis: Before you vote on the motion, I wish to state that we have no wish to handicap the Association by lack of funds, but

our County has gone on record three times unanimously, and insisted that the annual dues be reduced to $5. We don't question the sincerity of the Finance Committee, but we would suggest that they reduce the budget a little here and there so that they can operate on $5 per year, because I do know that there are a great many men not coming in because they feel that $10 is too much.

I personally feel that $5 would be sufficient. Personally, I don't care what you make it. But I do know that there are members in our County Society who will not come in if it isn't reduced to something like $5. As I say, I have no desire to tell the Finance Committee what to do. Neither does our Society. We don't object to our friend, Houston Moore's eloquent appeal for $8, but we do insist that consideration be given to the fact that our Society has three times unanimously requested that the fees be reduced to $5.

President Strosnider: Is there any further discussion?

Dr. McCall: Mr. President, we are having a certain amount of inflation. We couldn't get along before we had inflation. We couldn't get along before with $5. I would like the Society to go on record as holding up the $8, because if we don't we will be in the red again. I hope the Society will stick to the $8 figure, because we can always change it later. I don't believe we will get by with $5. I would like to see us stick to $8.

President Strosnider: All those in favor of the amendment as stated by Dr. Wright make it known by saying "Aye"; opposed, "No." The "Ayes" have it.

Now, what will we do with the report of the Finance Committee?

Dr. George Mitchell: To clarify the thing a bit, you can't set the fees at $8 without changing the By-Laws. So I make a motion that the House of Delegates instruct the Executive Committee to place the fee at $8, which they can do. However, you can't change it without letting it lay on the table for twenty-four hours, unless you do it that way.

Dr. J. E. S. Davidson: I move it lay over for twenty-four hours.

President Strosnider: Is there a second to this motion?

. . . The motion was duly seconded. . .

President Strosnider: Is there any discussion? All those in favor of the motion that this matter be laid on the table for twenty-four hours—

Dr. William H. Smith (Wayne County): Aren't you making a little mistake? Shouldn't something be done first with the report of the Finance Committee, and then take up the question of the dues?

Dr. J. E. S. Davidson: No, sir.

. . . It was moved that the report of the Finance Committee be accepted. . .

President Strosnider: Is there a second to the motion?

Members: What was the motion?

Dr. William H. Smith: I second that motion.

President Strosnider: Is there any discussion? If not, all those in favor of the motion make it known by saying "Aye"; opposed, "No." It is so ordered.

Dr. George Mitchell: Mr. Chairman, I would like to make my motion that the Executive Committee set the fee at $8, which they can legally do.

Dr. J. E. S. Davidson: I second the motion. (Laughter)

President Strosnider: Remember, my friends, this cannot take effect this year. I mean that practically six months of the year are gone. Our year runs from December 31 to December 31.

. . . The motion was put to a vote and carried. . .

Dr. William H. Smith: That is, the fees that are collected in 1938 shall be $8?

President Strosnider: That is right.

We will now recess for ten minutes, during which the Districts will assemble and nominate members of the Nominating Committee, and then report back, and we will return to our usual work. So we will ask you to get together and make your nominations.

. . . A short recess was taken at this point. . .

President Strosnider: The Secretary will read the names of the Nominating Committee.

Secretary Long: First, C. B. Williams; second, Grady Dixon; third, Houston Moore; fourth, George Mitchell; fifth, W. D. James; sixth, W. B. McCutcheon; seventh, J. A. Elliott; eighth, R. A. Schoonover; ninth, T. V. Goode; tenth, W. R. Johnson.

President Strosnider: At the close of this meeting this Committee will meet, organize and proceed with its duties as a Nominating Committee—to nominate the president-elect, the vice-presidents, and the committees, a list of which you can obtain from the Secretary.

The Secretary will read the next order of business.

Secretary Long: The next order of business is the report of committees. The first report will be that of the Committee on the Medical Society Foundation by John Q. Myers.

Dr. John Q. Myers (Mecklenburg County): Mr. President, as far as I know, I have received no message and haven't received any money. If we have anything in the treasury, I don't know anything about it. I do hope that some of you gentlemen will see fit to donate a small portion of your surplus income so that we may get this started. Many of you who are getting gray and bent with the years will remember to place in your will, I trust, a small token for the Medical Society Foundation of the State of North Carolina because we certainly will need it in the future.

I thank you. (Applause)

SECRETARY LONG: Next is the Committee on Legislation, Dr. B. J. Lawrence.

Mr. President, and Members of the House of Delegates:

Your committee on Legislation and Public Policy wishes to submit the following report, covering some of their efforts and activities during the past year, and especially with reference to their work during the past session of the Legislature and the present Congress.

At the very beginning the Chairman of your Committee wishes to thank Dr. Frank J. Highsmith, Sr., of Fayetteville and Dr. W. D. James of Hamlet—the other two members of the Committee—our President, our retiring Secretary Emeritus, and our new Secretary, the Senator from Halifax, Dr. Long, for their very untiring efforts and assistance. Finally, but not least, I wish to thank every member of this Society, throughout the far-flung battlefront of the length and breadth of this State. Without the able assistance of the membership, this Committee would be powerless in its efforts before the Legislature.

Your committee caused to be drawn an act known as the Diphtheria Bill, which would have made mandatory the vaccination of children between six and twelve months of age against diphtheria. This Bill was introduced in the Senate by Senator Ballentine of Wake. It had the approval of the Secretary of the State Board of Health, and our distinguished Secretary, the Senator from Halifax, who rendered every possible assistance. In spite of our efforts, there was a strong undercurrent against the Bill on account of certain religious beliefs. One of the outstanding opponents of this measure was the very able Mr. L. L. Graverly. Various amendments were propounded. Your committee, under the advice of Secretary McBrayer and Dr. McCain, superintendent of the Sanatorium, had advised our friends in the Senate to push the Bill through if possible, even though it became necessary to accept certain objectionable amendments, and we were pursuing that policy when right in the midst of the debate, Senator Ingram arose and gave it as his opinion that this amendment would render the Bill impotent and therefore he moved to table the Bill. His motion carried. On the following day, we made an effort to have the Bill removed from the table, but that took two-thirds vote, and we were unable to do that. Your committee is somewhat at a loss to explain just why there seems to be such deadly opposition to this Bill from certain sources.

One very important function of your Committee is to prevent or see that no objectionable legislation passes—it is a tedious and a painstaking task to read all bills introduced each day.

There was a bill proposed by certain individuals known as the Nautropath Bill. This was a very long and quite a formidable bill, covering some eighteen sections, and its purpose, among other things, was to set up a Board of Nautropathic Examiners, forming another and distinct branch of the healing art, almost identically like the one now in existence regard-

ing osteopaths, chiropractors, etc. This bill had the sponsorship certainly of one of the outstanding lobbyists, and it looked for a time as though we would have a right tough fight on our hands. The Bill was drawn by a very able attorney, and was submitted to your committee for a survey. We feel much gratified that we have reached the point in our dealings with legislative matters that those interested in legislation which will directly or indirectly affect the medical profession do not consider it good policy to endorse such legislation without consulting the medical profession. This Bill was held in abeyance and under consultation for a long number of weeks and finally died there.

There was a bill proposed by the chiropractors, which would have amended their act. It was submitted to Dr. Long. He in turn submitted it to us and to our attorneys, and every objectionable feature was stricken out and the bill was rendered impotent so far as the medical profession is concerned. The osteopaths likewise had a bill drawn this time, as usual, but they followed an entirely different course this year from what they did two years ago. You will recall that two years ago, they introduced a measure, backed by a strong lobby, which would have given them the right to practice medicine. Your committee was able after a hard fight, and with the assistance of the entire medical profession, to kill that bill in committee. This year the osteopaths brought their bill to us before they hired their lobby. And the medical profession is to be congratulated on account of that progress.

At a meeting of the Executive Committee early in January at the Sir Walter Hotel, a motion was offered by Secretary McBrayer and it was passed to the effect that the Executive Committee endorse the establishment of a four-year medical school in North Carolina, and that a Statewide committee be appointed by the President. The President appointed the committee and the report of that committee will appear in the minutes of the Executive Committee. Upon the passage of this motion and approval of the committee, carrying the endorsement of the Executive Committee, this cause became one of the primary interests of your Committee on Legislation and Public Policy. It was, therefore, endorsed unanimously by each member of the committee, and your committee therefore conferred with the Governor of North Carolina, Honorable Clyde R. Hoey, and as a result of that conference, and with the full approval of the Governor, and upon his authority to proceed, your committee caused to be drawn a resolution, which in turn was submitted to His Excellency, the Governor —the bill received his full approval and his unqualified endorsement. It was introduced in the Senate by our able and distinguished member, Dr. Long, and became officially Senate Resolution No. 196. It authorizes and directs the Governor to appoint a commission composed of seven members, not more than four, not less than three shall be regularly licensed physicians engaged in the practice of medicine within sixty days of its ratification, for the purpose of making a thorough study of the entire question

and to make recommendations to the Governor and to the 1939 General Assembly. Your committee put a good deal of effort and time into this matter.

In addition to the above, your committee gave its time and consideration to the question of the matter known as the Bostic resolution. You will recall that at the last meeting of the House of Delegates, a matter was presented by Dr. Bostic—I think it was referred to the Executive Committee—the Executive Committee meeting at Blowing Rock, considered the matter at great length, heard Dr. Bostic present the matter and referred the matter to the Legislative Committee for its study and disposition, and specifically requested Dr. Bostic to assist in the handling of the matter. Your committee gave the matter careful thought and study, corresponding with Dr. Bostic, presented the matter to our attorneys for their consideration. A bill was drawn at the suggestion of Dr. Bostic and was introduced in the Legislature by Senators Alcock, Abernethy and Bacon, known as Senate Bill 96. It was referred to the Committee on Roads. The Bill lay in committee for sometime. We finally persuaded Senator Sparger, the Chairman of the Roads Committee, to give us a hearing and especially to give Dr. Bostic an opportunity to be heard. The date was set, Dr. Bostic was notified, and was present and presented the matter, very forcibly. However, the Bill was attacked by the friends of the Highway Commission, by the friends of the road fund, and various others. In short, it proposed to set up a special commission with very wide and extensive powers and duties under the direction of a chairman and two assistants, and various secretaries and assistants, and it proposed to take one-half the automobile license tag fee (estimated to be some four million dollars), and thereby insure each automobile against liability. Your committee, like every other thinking person, recognizes the seriousness of the frightful mortality on the highways of North Carolina. We have studied the question at great length. We have caused to be introduced proposed legislation before this. Such a type of legislation meets two very strong opponents. Strange to say the Insurance Underwriters Association opposes this legislation, and second, in this particular case, the Highway Commission fought it bitterly. And there never was the slightest possibility of getting this bill through the Roads Committee. Your committee, with your permission, will continue its efforts and study of this question. Something should be done about the frightful loss of life and limb on the highways of our State; to say nothing of the damage to property.

Your committee was asked to consider certain other legislation, known to some as the Ohio plan, which provides for a State Highway Relief Fund by a tax on gasoline. We instructed our attorney to take this matter under advisement, and if possible to prepare a bill on the subject. After much study and consideration and after various conferences with members of the Legislature, your committee felt that any plan which would interfere with or divert funds from the Highway Fund would be opposed by the

Highway Commission, and that it would be unsuccessful. The Bostic plan and its ultimate failure is the concrete evidence of the correctness of this opinion.

Certain members of the medical profession desired and requested your committee to assist with Senate Bill 455, introduced by Dr. Long. It passed the Senate. It would have prevented the sale of barbituric acid preparations, except upon the prescription of a physician. However, this bill met its death in the Calendar Committee in the House. The committee was adamant in their refusal to consider the bill favorably. Dr. Long used his personal influence as did our attorneys and your committee in an effort to have this bill taken from the unfavorable calendar. There seemed to be a feeling among certain and otherwise intelligent people that this bill would give further special privileges to physicians and that sort of opposition is difficult to overcome.

At a special meeting of the Legislative Committee at the Sir Walter Hotel on January 23, Dr. James, a member of our committee. presented the question of endorsing a bill which would provide that a doctor certify complaint before cause of action could be drawn in a damage suit. This question was also presented to the Chairman of this committee by Dr. James Davis of Statesville and others. The matter was presented to our attorneys and they gave it as their opinion that the Bill would be clearly and wholly unconstitutional, and therefore the idea was abandoned.

It was also suggested that we confer with our attorneys about an act which would make mandatory a commission for the study and settling suits in personal injury cases. This matter was presented to our attorneys, and it was thought that it would be frowned on by the attorneys in the Legislature, and that your committee would be unwise to undertake such a bill at this time. It was suggested by a member of the committee that we undertake to prepare a Bill which would tax gasoline 1c per gallon for hospital bills resulting from accidents on the highways. This matter was presented to our attorneys, and it in substance is the same general idea as the Ohio plan, and it met the opposition of the Highway Commission, and those who are safeguarding the Highway Fund and who are clamoring for more road money for the rural and more remote sections of the State. However, this question is considered worthy by your committee, and we shall make a further effort on a subsequent occasion.

Your committee is interested and at times is startled by the strong trend toward socialized medicine in certain quarters. For instance, there has been drawn and introduced in the United States Senate Bill No. 855 by Mr. Capper, entitled "A bill to aid in alleviating the loss caused by sickness." This is a long and complicated affair, which is dangerous, and has very far-reaching potentialities. At one point it reads, "A salary system; a per capita system; whereunder payment will be based on the number of persons entitled to medical benefits, including the practitioner's list; a fee system whereunder payments will be based on the extent and

character of the treatment given; and services rendered by the practitioner to persons entitled to medical benefits" . . . "Claims complaints and controversies with respect to contribution to the fund, the remuneration to those furnishing the medical benefits, the adequacy, the quality, and extent of the medical benefits shall be determined by a local officer employed on a regular salary—claims and appeals shall be presented and heard and determined in accordance with such rules and procedures as may be prescribed (political and ward healers), but shall not be controlled by common law or statutory rules of evidence, or by the technical or formal procedure employed in civil actions." Could anything be more objectionable or dangerous to our profession?

Your committee has conferred with our representatives at Washington, including visits to the office of both Senators Bailey and Reynolds, and personal interviews in opposition to this monstrosity. Both Senator Reynolds and Senator Bailey have assured us of their help in handling this question.

The above, together with various conferences and interviews, covers some of the more important activities of your committee.

Respectfully submitted,
Dr. J. F. Highsmith, Sr.,
Dr. W. D. James,
By Dr. B. J. Lawrence, *Chairman, for the Committee.*

Dr. John Q. Myers (Mecklenburg County): Mr. President, I move that this report be received, and that the committee and Dr. Lawrence be given a special vote of thanks for the great and good work that they did during this past year.

. . . The motion was duly seconded. . .

President Strosnider: All in favor of the motion which you have heard make it known by saying "Aye"; opposed, "No." The "Ayes" have it. It is so ordered.

Secretary Long: Mr. President, we will next take up, out of order, at the request of Dr. McBrayer who wishes to retire, the report of the Committee on Printing.

Secretary-Treasurer Emeritus McBrayer: Mr. President and Gentlemen: The Committee on Printing, after receiving bids from several different printing houses, have let the bid for the printing of the transactions and the programs to the Durham Printing Company. I have forgotten the exact name of it but it is the same company that printed them last year. We received a little lower price than we did the year before.

That is all that has come to the attention of your committee.

President Strosnider: Gentlemen, you have heard the report. I will entertain a motion to receive the report of the Committee.

. . . It was moved and seconded that the report be received. . .

President Strosnider: All in favor of this motion make it known by saying "Aye"; contrary. It is so ordered.

Secretary Long: The Committee on Hospitals, Dr. J. F. Highsmith, Sr.

Dr. J. F. Highsmith, Sr.: Mr. Chairman, there is no special report from the Committee on Hospitals. Things have been running smoothly. I might state that the Hospital Savings Association, of which we are a part, seems to be doing very well at this time. It looks like we are going to make good.

President Strosnider: You have heard the report of the Hospital Committee. Do I hear a motion to accept it?

. . . It was moved and seconded that the report be accepted. . .

President Strosnider: All those in favor of the motion make it known by saying "Aye"; opposed, "No." The "Ayes" have it.

Secretary Long: Next is the report of the Committee on Cancer, Dr. H. B. Ivey, Chairman.

REPORT OF THE CANCER COMMITTEE OF THE NORTH CAROLINA MEDICAL SOCIETY

Your committee on cancer held its first meeting in Goldsboro, N. C., on November the 9th and a tentative plan of the year's activities was outlined. At this meeting it was decided to write a number of physicians in each district of the State asking them to hold themselves in readiness to help us at any time. It was also decided to write each organized society in the State asking them to hold at least one meeting during the year at which meeting cancer would be the main topic of discussion. We had been notified by the American Society for the Control of Cancer in New York that they intended putting on an intensive publicity campaign in this State, through Federation of Women's Clubs in the State in coöperation with the committee. The committee endorsed this move.

The matter of the publicity campaign by the American Society for the Control of Cancer through the Women's Clubs was investigated and their plans obtained. The plan was to form what they term a Field Army with a Commander for the entire state and she was to appoint Captains for each district then in turn lieutenants for counties or small subdivisions. These officers planned to hold meetings and these meetings to be addressed by a physician on the subject of cancer. The idea being to disseminate the knowledge of the signs and symptoms of cancer to every person in the State. Their object was to make the early signs of this disease familiar so the victims might have the opportunity to avail themselves of treatment when treatment is of the most value. This to be a permanent organization and a fee of $1.00 was charged for membership. This money collected by the Army will be handled by them to carry on their educational campaign

and some of it will be used in each county for the treatment of the indigent cancer cases.

After obtaining the proposed program of the Field Army the committee notified each county society of the proposed activities and asked them to either elect or appoint a cancer committee from that society in order to have a working organization in each county to coöperate with the Field Army. The committee was of the opinion that the cancer activities in each county should be under the direct control of the county society. In this letter the county society was asked to furnish speakers on request for lay meetings or to select a speaker from the list submitted by the field representative. The list to be submitted was constituted by twenty men over the State that had signified their willingness to do this work. Five county societies replied to this later saying they had complied with the request. They were New Hanover, Stanley, Cherokee, Wilson and Wayne. The committee appreciates the interest shown by these counties, and also wishes to thank the twenty men in the different districts of the State for their services and kindly interest in this work.

They wish to report that several of the counties in our immediate community have held one meeting at which the scientific program was on cancer. There has been several lay meetings of Women's Clubs, P. T. A. and other organizations that have been addressed by physicians on various phases of cancer. Most of these addresses have been given by the physicians in the immediate vicinity. Some of the physicians have been furnished with literature from the Society for the Control of Cancer. There has been available lantern slides and films to aid in these discussions.

The Society for the Control of Cancer furnished us an exhibit of wax models illustrating cancer in various parts of the body. This exhibit was used at Charlotte at the State Meeting of the Federation of Women's Clubs. This exhibit attracted considerable attention and we have received letters of favorable comment.

The expense of the committee as been as follows:

Telephone and Telegraph	$ 7.89
Stamps	4.80
Letter File	.52
Carbon Paper	.52
Express, Models	2.96
Dr. Phillips, Expense setting up exhibit	3.50
	$20.19

In conclusion the committee would like to offer one criticism or comment. There is a seeming lack of interest and enthusiasm in this subject by the average physician. It seems to be the consensus of opinion of most physicians that a few men have become over enthusiastic on the subject of cancer. This may be true to some extent but it seems to us that anything, be it disease or what not, that takes 150,000 lives in this country each

year and is second among the causes of death, should have at least very serious consideration. There is just one thing we know about cancer, if it is treated early it can be cured in most instances. We as practitioners of medicine must accept the responsibility of educating the people to the point where they will be treated early. We as physicians are standing at the threshold of a great opportunity.

H. B. Ivey, *Chairman,*
T. Leslie Lee,
C. C. Carpenter.

President Strosnider: Gentlemen, you have heard the report of the Committee on Control of Cancer. The Chair will entertain a motion to receive this report and discharge the committee.

. . . It was moved and seconded that the report be accepted. . .

President Strosnider: All in favor of this motion make it known by saying "Aye"; opposed, "No." The "Ayes" have it.

Secretary Long: The next item is the report of the Committee on Public Relations, Dr. D. W. Holt, Chairman.

. . . Dr. Holt presented the prepared report of the Committee on Public Relations. . . (Applause)

Mr. President, and Members of the House of Delegates of the Medical Society of the State of North Carolina:

Your Committee on Public Relations submits to you the following report: So far as we can learn, there has been no medical legislation enacted in the State during the past year. However, we feel that the time is now ripe for us to call to the attention of this Society a matter which deserves most careful consideration and action, and unless we strike while the iron is hot, we fear that we are going to be awakened some morning and find that our profession has been asleep at the switch!

No doubt many of you know, already, to what we have reference even before we state specifically the subject to which we hope will be given due attention—and that is the matter of sickness insurance or the Security Act, state medicine or socialized medicine, all of which mean about the same insofar as it applies to the medical profession.

We were delighted to learn that President Strosnider in January of this year appointed a dozen physicians in this State as a general committee to see that their own local county societies should appoint a like committee to coöperate with this State committee in the handling of this matter. Personally, I was very glad to know that Doctor Strosnider had appointed as chairman of this committee, Doctor Wingate Johnson of Winston-Salem, our incoming President of the State Society, and I am sure that we are all of the same opinion, that he could not have appointed a more capable and active man to this important office. In fact, before he had been appointed as chairman of this committee, he was already giving the matter careful and thoughtful consideration.

As you realize, "health insurance" is a form of socialized medicine under which the individual pays in advance a stipulated sum of money to guarantee payment of costs of medical and hospital care in the event of illness. "Socialized medicine" is a broad term and anything that's socialized which is assigned by groups of people rather than as individuals, and gentlemen, our medical profession may be socialized in several ways —we fear in the near future—state medicine is that form of socialized medicine under which medical services are furnished by government employees and are paid out of tax funds.

A number of European countries have tried all three, much to their sorrow, and we would be very stupid to copy their mistakes, since they have so plainly shown us what a miserable failure they have made. Contrary to general belief, health insurance has not lowered the mortality rate in countries which have adopted it. It has not lowered the sickness rate, but paradoxically the days of sickness per capita have more than doubled in every country with compulsory health insurance. Health insurance, where it has been tried, has increased the total cost of medical care. In Germany, owing to an enormous administrative staff of 32,400 people and the higher degree of political control which has always been the inevitable in compulsory health insurance, deterioration of the quality of medical service and the retardation of professional progress have been the result, and we can rest assured that American medicine will follow in its footsteps unless we get busy and see to it that the same miserable legislation is not now forced upon us.

Socialized medicine, once established, is difficult to abolish, and this should be borne in mind and be a warning to us. We are told that in countries where socialized medicine and health insurance have been tried that pretenders and hypochondriacs are bred among the people who assume the attitude, "Why do we care? Let the government pay." Too, it cultivates the type of doctors who are too ready to assume the same attitude and likewise say, "Why should I care? The government will pay me just the same, so why should I expend any energy as to careful diagnosis and proper treatment?"

Socialized medicine brings about a state of affairs that enables a patient to demand service where he formerly sought advice. Should the physician find that the patient does not really need treatment and tells him so, then the doctor is accused of loafing on the job, or if he prescribes treatment distateful to the patient, then he is likely to be reported to the management.

Advocates of compulsory health insurance are telling us that it spares the young doctors the hardships of building up a private practice—and gentlemen I am frank to tell you that the only members of our profession whom I have heard say that they hoped we would soon have state medicine were the type of men who are too lazy to get out and work, and who are too ready to sit back and feel that their M. D. degrees, which in their

case should probably mean "Mule Drivers" rather than Doctors of Medicine, should be sufficient to bring the patients to them. The years a doctor spends building up his practice are an essential part of his training. If he does not have the knowledge and skill necessary to make the grade, he has no business practicing medicine. Socialized medicine may appeal to those of mediocre ability and inherent laziness but to the real doctor of ability and determination and one who wants to better himself and his profession and do all he can for his patients at all times, such a system of practice is just about as popular as arthritis of the fingers to a stenographer or a piano player.

We are told in those countries where compulsory health insurance and socialized medicine have been established that it is not possible to maintain an efficient health insurance system and still allow the patients their choice of doctors. As in the British Panel System, the more competent physician would be rushed to death and a system of pill peddling and a hurried diagnosis would result.

Doctor Frederic E. Sondern, Past President of the Medical Society of the State of New York, has this to say of the British Health Insurance system:

"In England it is difficult for the family physician to get all of the facts from the patient. The patient knows that the record of his history and sickness is inspected by the medical officer as well as by the insurance commissioner of the approved society. He is therefore guarded in his disclosure concerning himself, contrary possibly, to his own welfare. There are rigid restrictions as to the cost of drugs and appliances which hamper the doctor and affect the patient's comfort. Officials pry into the details of the relationship, which tends to lessen the patient's respect for the doctor."

Gentlemen, health insurance practice has to be quick and cheap practice. Health insurance state medical doctors find it much easier to give a health insurance patient a bottle of medicine than to give him a thorough diagnosis. Under state medicine the doctor would be subject to bureaucratic control, and would be responsible to political control by non-medical persons. A system of bureaucracy would fasten itself to the medical profession like the Old Man of the Sea and would impose all kinds of senseless rules and regulations.

In studying this subject and reading extensively, we have found that in countries which have provided this form of medicine that it curtails still further the ability of men to provide their families with wholesome food and decent living quarters, and thus increases the amount of sickness, caused by malnutrition and slum conditions, where most of their money should be spent rather than going into health insurance tax.

Doctor William J. Mayo says:

"We of the medical profession are determined that we will not be subject to political interference. We will not sacrifice the spiritual values

of our profession for the small material gains held out to us by political and social experimenters who are attempting now to control the practice of the profession. We refuse to be dictated to by men who are not physicians, who do not understand the sacred obligation of physicians to their patients."

To summarize:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

In conclusion, as we see it, the alternative to this important question may be summed up by saying there is no easy, quick, quack remedy for improving the public health. Conditions vary in every community. Only by continuous steady raising of standards and extension of facilities now existing can real progress be made. Medical societies throughout this and other states must coöperate in many and various plans consistent with the distribution of medical care, and it behooves us of the Medical Society of the State of North Carolina to get busy and see to it that we are doing our part to solve this most important question, and as stated in the beginning of my paper, it seems to us that the time is now ripe for us to get busy and not find ourselves in the position of one who has set back and allowed such a diabolical state of affairs as has existed in many European countries for several years, to be thrust down our throats.

I feel safe in saying that our incoming President will see to it that this Society will do its part and not allow a third party to come between us and our profession in any medical relation, and that we shall at all times assume all responsibility for the character of the medical service which should be borne by our time honored profession, and that our patients will have absolute freedom to choose a duly qualified Doctor of Medicine who will serve them from among all those qualified to practice, and who are willing to give safe, conscientious, and capable service.

D. W. Holt, *Chairman,*
L. B. McBrayer,
Committee Public Relations.

Dr. George L. Carrington (Alamance-Caswell County): This is, I think, a mighty important report. If it is in order, and the program allows

it, I would like to suggest that this report be considered before one of the general sessions so that a larger audience may have the benefit of it. I would like to make such a motion.

President Strosnider: We will first accept the report.

Dr. J. W. Davis (Iredell-Alexander County): I move that the report be accepted.

. . . The motion was duly seconded. . .

President Strosnider: All in favor make it known by saying "Aye"; opposed, "No." It is carried.

We will now have your motion.

Dr. Carrington: I would like to move that this report be presented before one of the general sessions.

. . . The motion was duly seconded. . .

President Strosnider: Gentlemen, you have heard the motion. Is there any discussion? If not, all those in favor of the motion, that this paper be presented before one of the general sessions, make it known by saying "Aye"; opposed, "No." The "Ayes" have it. We will make arrangements for this paper to be presented before one of the general sessions.

Dr. William H. Smith: May I interrupt the program by asking this question? I know that there is a testimonial dinner planned for Dr. McBrayer tomorrow evening. Has any other plan been made to show the appreciation of the Society to Dr. McBrayer for his twenty-one years of service in the form of a present or anything else?

President Strosnider: There has, Dr. Smith, and for the information of the House of Delegates there has been a special committee appointed to take care of this particular phase, and it will be attended to at the proper moment.

Secretary Long: Next is the report of the Committee Advisory to the Industrial Commission, Dr. Donnell B. Cobb, Chairman.

Dr. F. C. Smith: Dr. Cobb was unavoidably detained in Goldsboro and asked that I give the report as best I can, which will have to be very brief. During the past year ninety per cent of the bills have been paid as rendered by the doctors. Ten per cent have been cut. Forty-six thousand one hundred fifty bills were paid; 86 were contested. During the three years that we have served, 26 per cent of the contested bills have been raised.

The good the committee has rendered cannot be counted, I believe, in dollars and cents, but I do think it has been worthwhile in good-will. It is my personal belief that the differences between the Society and the Industrial Commission will gradually be ironed out.

. . . It was moved and seconded that the report be accepted. . .

President Strosnider: All those in favor of this motion make it known by saying "Aye"; opposed, "No." The "Ayes" have it. It is so ordered.

SECRETARY LONG: Next is the report of the Committee on Post-Graduate Medical Study, Dr. R. H. Hardin, of Banner Elk, Chairman.

DR. C. L. SHERRILL: Mr. President, Gentlemen: Dr. Hardin could not come and he asked me to make the report for him.

. . . Dr. Sherrill presented the prepared report of the Committee on Post-Graduate Medical Study, making the following interpolations:

(1) preceding the words, "2. Other Post-Graduate work in the State": At this Banners Elks meeting, the first day was given to scientific papers, very splendid papers. The second day was given to clinics. The clinics were conducted by Dr. John Muster of New Orleans, and he had a mighty good clinic.

(2) preceding the words, "Dr. G. M. Cooper of the State Board of Health": I think Dr. Mangum is in the house tonight and I believe he has a very detailed report of his work. They have done some excellent work.

(3) preceding the words, "The function of supervision": I think this course in obstetrics was one of the best courses I ever attended. Dr. Cooper is to be congratulated on this work.

. . . Dr. Sherrill then completed the presentation of the report.

REPORT OF COMMITTEE ON POST-GRADUATE STUDY

Dr. R. H. Hardin, Chairman, Banner Elk; Dr. Coite L. Sherrill, Statesville; Dr. James W. Vernon, Morganton.

As a member of this committee I am asked by the Chairman, Dr. R. H. Hardin, of Banner Elk, to make a brief report to you tonight in the place of his more detailed report to be made later. Dr. Hardin is now sick in a hospital and has been unable to perfect his report in the form he had planned for you tonight.

The Chairman has a report to make under the following heads:

1. Direct work of the committee and the courses arranged by the committee: Banner Elk course of lectures and clinics covering two days—last August.

2. Other post-graduate work in the State not directly arranged by this committee, but having its approval; Duke Orthopedic; Goldsboro and Raleigh under University Extension plan.

3. Dr. G. M. Cooper of the State Board of Health, Raleigh, N. C., has coöperated in every way possible with our committee. He was instrumental in arranging a most excellent series of lectures and moving picture demonstrations in obstetrics throughout the State.

4. The function of supervision and approval. The committee has deemed it advisable and wise that its approval should be sought for all medical lectures and clinics given in the State to the end that the Society should have knowledge of the courses given and determine whether they

are ethical and worthy of endorsement by the Society and the profession of the State.

5. Plans for the future. Here the chairman expects to point out the needs for the coming year and what is hoped may be accomplished.

This report the Chairman begs permission to present to the officers of the Society and the Executive Committee for their consideration and approval in ample time for publication in the next TRANSACTIONS.

Respectfully submitted,

DR. COITE L. SHERRILL,
DR. JAMES W. VERNON,
Members of the Committee.

REPORT OF POST-GRADUATE COURSES IN MEDICINE

The Extension Division and the School of Medicine of the University of North Carolina offered during the school year 1936-37 two extension courses of graduate instruction for practitioners of medicine.

The first was offered at Goldsboro, with 86 registered. The course consisted of one meeting each week, for seven weeks, extending from September 24 to November 5, 1936. The price was $15.00 per person, including dinner at each meeting. The counties served were: Duplin, Edgecombe, Green, Harnett, Johnston, Lenoir, Nash, Pitt, Sampson, Wayne, Wilson.

The program was as follows:

September 24: "Diagnosis of Acute Abdominal Conditions," Dr. Charles Reed Edwards, University of Maryland Hospital.

October 1: "Allergy," Dr. Warren T. Vaughn, Richmond, Va.

October 8: "Vascular Diseases of the Brain," Dr. Walter Freeman, Washington, D. C.

October 15: "Common Forms of Anaemia," Dr. Thomas Fitz-Hugh, Jr., University of Pennsylvania, Philadelphia.

October 22: "Coronary Diseases," Dr. Paul White, Massachusetts General Hospital, Boston.

October 29: "Pediatrics," Dr. Albert Graeme Mitchell, University of Cincinnati.

November 5: "Vincent's Infection, Mode of Spread to Lungs, Diagnosis and Treatment," Dr. William T. Smith, Duke University.

The second course was offered at Raleigh, extending from March 17 to April 28, and consisting of seven lectures. The price per person was $15.00, including dinner at each meeting. The number enrolled was 115. The counties served were: Wake, Franklin, Warren, Granville, Johnston, Edgecombe, Nash, Wilson, Cumberland, Person, Chatham, Vance, Harnett, Lee, Wayne, Orange.

The program was as follows:

March 17: "The Causes, Relations, and Treatment of Cardiovascular Renal Disease," Dr. Stewart R. Roberts, Atlanta, Ga.

March 24: "The Diagnosis and Management of Gall Bladder Diseases," Dr. T. Grier Miller, University Hospital, Philadelphia.

March 31: "Common Skin Diseases," Dr. Howard W. Fox, New York University.

April 7: "The Hemorrhages of Pregnancy," Dr. James R. McCord, Emory University, Atlanta, Ga.

April 14: "New Advances in Nutrition with Particular References to the Vitamins," Dr. C. P. Segard, Wisconsin Alumni Research Foundation, New York City.

April 21: "Goitre," Dr. George P. Muller, Prof. of Surgery, Jefferson Medical School, Philadelphia.

April 28: "Acute Infectious Diseases," Dr. Charles F. McKahnn, Professor of Pediatrics, Harvard University, Boston.

Dr. William H. Smith, of Goldsboro, suggested the plan and served with Dr. Charles S. Mangum, Dean of the Medical School, and R. M. Grumman, Director of the Extension Division, on the central organization committee. In each case a local committee was formed to coöperate with the central committee in planning and promoting the course.

It is estimated that a total of 300 physicians attended one or more of the above lectures. (Of this number approximately 15 were negro doctors.) The average attendance was unusually high. Several special clinics were arranged in addition to the lectures.

The University of North Carolina is interested in coöperating with groups of physicians in conducting similar courses in other parts of the State. The plan is designed to provide the kind of instruction desired by practicing physicians. It is proving to be a very successful method of extension education for professional groups.

R. M. Grumman,
April 28, 1937 *Director, University Extension Division*

President Strosnider: Gentlemen, may we have a motion for the acceptance of this report?

. . . It was moved and seconded that the report be accepted. . .

President Strosnider: All those in favor of the motion make it known by saying "Aye"; opposed, "No." The "Ayes" have it.

Is Dr. Mangum present? Dr. Sherrill asked that you say something about the course put on at the University Extension Department. Will you give us a summary of that at this time, please?

Dr. C. S. Mangum (Duplin County): Gentlemen, I hate to take the time, but if I have been asked to do this, I suppose it is my privilege as well as my duty.

As many of you know, a good many years ago, the University School of Medicine, Extension Division, carried out a series of post-graduate courses for practicing physicians in this State, of an intensive nature. Those courses did a great deal of good. They rendered their service. It was a fine service, but with the development of the profession they ceased to have as important a place as they had appeared to have at first, and following the World War the plan lapsed.

About this time a year ago, Doctor William Smith, of Goldsboro, came to Chapel Hill to see me and called attention to the fact that physicians in his section had formed the habit of inviting clinicians to come for a single visit to give a clinic or a lecture, that they derived a great deal of benefit from these visits, and suggested that we might expand this plan to include a larger area and make the course longer.

So I called a conference with Mr. Grumman, the Director of the Extension of the University, and Dr. Smith and we devised a plan, the idea being to throw the responsibility of organizing and conducting the course in so far as possible upon the physicians themselves, feeling if you gentlemen had an idea it was your party, you would take more interest in it. It turned out we were right.

We called a meeting in Goldsboro, inviting one representative of each of eleven counties, all in touch with Goldsboro and that neighborhood, met in Goldsboro with Dr. Smith, and organized in these eleven counties in the following way: The Dean of the Medical School, the Director of the Extension Division, and Dr. Smith were made a central committee, a managing committee, a directing committee, and a representative or chairman for each county was chosen and he was burdened with the responsibility of seeing every physician in his county and enlisting his interest and getting him to register for the course.

Our success was phenomenal, much greater than we thought it would be. All in the neighborhood seemed to take an interest in it. There was a good deal of enthusiasm. We charged $15 for what was supposed to be six occasions. We have gotten money enough to give seven. We would meet once a week at seven o'clock. We chose a central point, Goldsboro, in reach of all.

For that $15, for seven weeks they would meet at seven o'clock and have a dinner and then about fifteen to twenty minutes bull session. Then we would meet for the lecture. We had no clinics in Goldsboro, they were simply lectures.

We had a local committee. That central committee consisting of the chairman from the different counties, arranged a program, chose the subjects, and picked the clinics. But the invitations to the clinics to come and take part in this course went from the University School of Medicine, and we succeeded in getting some of the most prominent men in the country to come. We were able to pay them a stipend, an honorarium in addition to their expenses. We managed to get out eighty some odd men,

eighty-six if I remember correctly registered for it, and the course was run so successfully and comments on it were so favorable that we decided to try it again.

So we had a meeting of the same type in Raleigh last winter, with a committee from Wake County and adjoining counties, and followed the same plan, except that we chose a local committee consisting largely of Raleigh physicians—if I remember correctly, Dr. Fox as chairman—to coöperate with our central committee, and they went to work with a tremendous amount of enthusiasm, as well as the chairmen in the counties surrounding.

I think, if I remember correctly, there were sixteen counties in this last group. One hundred and fifteen men I think registered for the course. It was also to be six weeks. It lasted seven, and I have heard nothing but favorable comments about it. The physicians in Raleigh or in Wake County added something to it.

In this last course, with the exception of one meeting, when the man talked on vitamins, the physicians arranged a clinic in the afternoon at four o'clock, and the clinician who had come to make the talk in the evening held that clinic. Of the one hundred and fifteen men registered for this course in Raleigh, the average attendance was over ninety, and a total of two hundred individuals attended one or more of the occasions.

I have been told, although I didn't attend the clinics, that the average attendance at the afternoon clinics of physicians from these fifteen counties was fifty. That is a pretty good showing.

Now the question comes as to whether this plan meets with the approval of the profession of the State, and whether it will render a service that is worthwhile. We think that in our two efforts, which have been more or less experimental, it has proved to be a success. We are very much encouraged. I am here to extend to you all our willingness at the University of North Carolina, the Extension Division and the Medical School, to coöperate with any group of you anywhere who are willing to take upon yourselves this same responsibility to put the thing over. We will run it for you. We will arrange it and organize it and attend to the details, or take the drudgery off your hands and see that it pays out.

A number of places have already intimated that they would like to have it, and if any of you are interested you can correspond with me, or you may correspond with Mr. Grumman, the Director of the Extension Division, and we will do everything in this world we can to help put it through.

We have added to our central committee, which heretofore has consisted of Dr. Smith, Mr. Grumman and myself. We have added Dr. John Wright, of Raleigh. We did it largely because of enthusiasm and interest that he showed in the course in Raleigh, the success of which depended tremendously on the efforts of the men on the local committee in Raleigh.

I feel that it is something that offers the physician a chance to get the last word on various subjects of interest, and we stipulate whenever we invite a clinician that whatever he has to give must be planned to be interesting and helpful to the general practitioner, not specialists. It is for the doctors in the small places more than it is for you men who are specializing, with wider opportunities. Along with it is relaxation, an opportunity to see your friends, a good time, a good dinner, and something, not too much, to listen to.

I have a program, and I don't want to take your time to read it. I am going to leave this program with the Secretary. If any of you wish to see the subjects that were given at those two courses, and during those two courses, and the clinicians who did the work, the report will be in his hands. I won't take your time to read it.

Dr. E. A. Livingston (Scotland County): I would like to ask one question before you sit down: How many doctors must you get before you can bring it to a community?

Dr. Mangum: We stipulated in Wake County we would have to have seventy-five to pay out on a $15 basis. We paid the clinicians a bonus of $15 and their expenses to come. It is worth saying that both in Goldsboro and in Raleigh at the end of both courses there was a little surplus left over, which amounts now to several hundred dollars. We are putting that aside in a reserve fund, and just as soon as it gets large enough to be worthwhile, we propose to offer one of these courses in some section of the State where the physicians are not so numerous, where that reserve fund can be used to help put on one of these courses where perhaps there are not enough local physicians to finance it. We hope to be able to do that this next year.

Dr. Livingston: We would like to be remembered down in our section, down near Hamlet, North Carolina.

Gentlemen, I have attended these meetings everywhere they have held one, and anywhere that I could contact them within fifty miles. They are certainly worthwhile. I want to say if it is possible to get one, that comes within fifty miles, I would like to attend and see that a number of our men attend, and if you have some money to spare so you can get down in some of the more sparsely settled sections, that would be very helpful. They are certainly worthwhile.

President Strosnider: Thank you very much, Dr. Mangum, for your very interesting remarks.

We will have the report of the next committee now, please.

Secretary Long: Dr. Paul F. Whitaker, Chairman of the Advisory Committee on Maternity and Infancy for the Children's Bureau. He is sick.

. . . The report is attached to the record. . .

Next is the report of the Committee on the Control of Syphilis, Dr. John C. Knox, Chairman.

REPORT OF MEETING OF SPECIAL COMMITTEE ON VENEREAL DISEASE CONTROL

DECEMBER 14, 1936, RALEIGH, N. C.

A meeting of the Special Committee on Venereal Disease Control, appointed by Dr. C. F. Strosnider, President of the North Carolina Medical Society, at the request of Dr. Thomas A. Parran, Jr., Surgeon General of the U. S. Public Health Service, was called for 10:30 A. M. December 14, 1936, at the State Board of Health Building, Raleigh, N. C.

Those present at the meeting were: Dr. Louis C. Skinner, Dr. Sydney Smith, proxy for Dr. Hamilton W. McKay of Charlotte, members of the committee, and Dr. J. C. Knox, chairman of the committee, and also Dr. John H. Hamilton, Director of the State Laboratory of Hygiene.

The meeting was called to order by Dr. Knox, the chairman, who explained its purpose. A general discussion of each of the questions suggested for solution, followed. The committee's conclusions and recommendations are summarized, briefly, as follows:

1. THE SYSTEM OF NOTIFICATION MOST SUITABLE TO PHYSICIANS, PATIENTS AND HEALTH AGENCIES.

It was explained that the present system of reporting in North Carolina is by report card, giving either the name or number of patient; if number is given a corresponding number is kept in the physician's office as a means of identifying the patient by name, if necessary. The committee considers this a satisfactory method of reporting the venereal diseases.

2. THE ADDITIONAL LABORATORY FACILITIES NEEDED FOR DIAGNOSIS OF SYPHILIS.

The Committee agrees that additional laboratory facilities are definitely needed for the diagnosis of syphilis. At the present time the facilities at the State Laboratory of Hygiene for serologic tests for syphilis are taxed to capacity. Approximately 140,000 specimens for Wasserman tests will be submitted to the Laboratory during the year 1936. Limitation as to the number of specimens submitted by physicians and health officers of the State has existed during the year. Doctor Hamilton, Director of the Laboratory, feels that the diagnostic facilities of the Laboratory are primarily for the use of the practicing physician and he has discouraged surveys for determining the prevalence of syphilis conducted by health officers and industrial groups throughout the State. Doctor Hamilton advocates the more widespread use of the delayed dark-field examination of chancre serum, which consumes considerably less time and requires less technical facilities than other tests. He stressed the value of this test in early cases of syphilis and said he felt it was the most positive test for syphilis in use at this time. Specimen outfits composed of capillary tubes and mailing containers are available through the Laboratory.

It was further brought out that in order to increase facilities for diagnosis of syphilis that local laboratory personnel of the various health departments, in addition to the dark-field examination, should do presumptive diagnostic precipitin tests, probably the Klein test. He felt that this would lessen the burden of work placed upon the Central Laboratory.

3. The Policy Recommended in the Distribution of Antisyphilitic Drugs.

The committee feels that antisyphilitic drugs should be distributed to clinics treating syphilitics of the indigent class without cost to the clinic. There was also recommended a distribution of drugs through the Laboratory to the private physician for the treatment of his private cases upon the same basis as now in use, that is, at approximate cost.

4. The Adequacy of Free Treatment Facilities for Those Who Cannot Pay Physician's Fees.

The committee feels that adequate treatment facilities should be provided to those unable to pay a physician's fee for private treatment.

5. The Nature and Extent of the Additional Facilities Needed.

The committee recommends that such facilities be in the nature of clinics established in the counties and communities where they do not now exist. The committee feels that physicians should be compensated in some way for their services at these clinics.

6. The Physician's Part in the Application of Epidemiologic Methods for the Control of Syphilis.

The committee suggests that the coöperation of the practicing physician be in the nature of education of his patient to the necessity for divulging contacts and persuading them to be treated. An objection was raised to the physicians taking a very active part in such a program unless all physicians who treat syphilis could be relied upon to practice the same procedure; in other words, it is felt that a physician might discourage private patients from taking treatment from him if he made too strenuous an effort to follow up these cases from an epidemiological standpoint. That also would be true, it is felt, if he reported lapses in treatment by the patient to the health department, which would result in epidemiological investigations.

7. The Possibility of Developing Minimum Standards of Treatment for Early Syphilis.

The committee was in entire accord with the necessity for developing minimum standards of treatment. They felt that much could be accomplished by an educational program, impressing upon the layman the necessity for adequate treatment, and also that the physicians who engage in the treatment of syphilis should be acquainted with the newer methods of treatment including actual treatment procedures and drugs used. It was

suggested by the committee that each county medical society each year have someone address the society on the problem of syphilis control.

8. The Availability of Hospital Beds for Treatment of Cases Needing Hospitalization.

Although there are now a number of hospital beds available for the treatment of cases of syphilis needing hospitalization in certain communities, the committee feels that an effort should be made to secure hospital beds for all cases in all communities in need of such facilities.

9. Methods for the More Adequate Prevention of Congenital Syphilis Through Recognizing and Treating the Disease Among Pregnant Women.

The committee commends the action of the Division of Preventive Medicine of the State Board of Health for its activities in the establishment of prenatal clinics and for its educational work dealing with this phase of public health and the committee recommends an extension of this service wherever needed.

10. The Lines Along Which Informative and Educational Programs Should Be Conducted.

The committee feels that educational programs designed primarily for lay groups should be conducted through newspaper articles dealing with prevalence of syphilis and the necessity for control measures. It was advocated that each county medical society set aside one of their regular meetings for a discussion of this important problem. Commendation of a recent article by the Surgeon General, Dr. Thomas Parran, Jr., which appeared in the *Reader's Digest,* was unanimous. The committee feels that information of this type probably could be best released through the State Health Department to its local health units in the form of newspaper articles.

11. The Possibilities of Prophylactic Measures Being Taught and Administered Through Physicians' Offices, Out-Patient Hospital Services and Clinics, with the Thoroughness and Precautions Governing Army and Navy Procedures.

The committee feels that physicians treating cases of syphilis should instruct their patients on prophylaxis with the hope of the patients influencing those not already infected to take these necessary precautions. It was felt that probably this should be limited to the following methods: thorough cleansing with soap and water, or the use of some mechanical device for protection. The committee believes that probably the chemical prophylaxis would require too much effort on the part of the physician and with too little result in the ultimate control of the disease.

In addition to the foregoing points, the law and the rules and regulations now existing in this State for the control of the venereal diseases, was

discussed. The committee, after examining the present law and rules and regulations, agreed that the law as it is now written is adequate but the rules and regulations should be revised and made to conform with the law.

Respectfully submitted,

HAMILTON W. MCKAY,
LOUIS C. SKINNER,
JOHN C. KNOX,
Chairman of the Committee

DR. JOHN C. KNOX (Wake County): Mr. President, Members of the House of Delegates: The Surgeon General of the United States Public Health Service asked that a committee be appointed to represent the State Medical Society to discuss certain questions that have arisen with reference to the control of syphilis, and those questions were submitted to a committee appointed by the President, consisting of Dr. Hamilton McKay of Charlotte, Dr. Louis Skinner of Greenville, and myself as chairman of that committee.

We met and discussed those questions, and made certain recommendations and turned them in to the Executive Committee, and if you would like we will let that go in the record and not keep you with that report.

Those questions were discussed and recommendations made, and as time is getting short, and if you would like, we will just let that go in the record. It is in the minutes of the Executive Committee and it will be published, and I think if you will let that go that will cover it.

PRESIDENT STROSNIDER: You have heard the report of Dr. Knox. A motion to receive said report is in order.

DR. GEORGE L. CARRINGTON (Alamance-Caswell County): I move it be accepted.

DR. B. C. WILLIS (Edgecombe-Nash County): I second the motion.

PRESIDENT STROSNIDER: All in favor of this motion make it known by saying, "Aye"; opposed, "No." The "Ayes" have it.

SECRETARY LONG: The Committee on the Social Security Act, Dr. Wingate M. Johnson, of Winston-Salem.

. . . Dr. Johnson presented the report of the Committee on the Social Security Act. . .

REPORT OF COMMITTEE ON SOCIAL SECURITY

Mr. President: At a meeting of the Executive Committee held in Raleigh on January 15, President Strosnider warned of the danger of some form of socialized medicine being thrust upon the country soon, and offered certain suggestions for combatting it. These suggestions were approved and a committee appointed to continue a study of the subject and offer recommendations from time to time as occasion arose. Dr. McBrayer, secretary of this committee, wrote letters to every county

society in the State, asking that a local committee be appointed to coöperate with the state committee.

Replies have been received from the following counties, indicating the appointment of such committees:

Alamance: Drs. W. C. Goley, Donald E. Robinson, Floyd S. Scott.

Buncombe: Drs. P. H. Ringer, R. A. White, G. F. Parker, J. T. Saunders.

Cherokee: Committee not named.

Chowan: Drs. J. A. Powell and L. P. Williams.

Lenoir: Drs. Thomas L. Lee, W. Eugene Keiter, R. G. Tyndall.

New Hanover: Drs. Ernest Bullock, J. B. Cranmer, F. O. Fay.

Person: Drs. B. E. Love, A. F. Nichols, J. H. Merritt.

Wilson: Drs. A. T. Strickland, M. A. Pittman, M. P. Mullen.

Since its appointment, it has not seemed necessary to call our committee together, though all its members have been giving thought to its problems. Dr. Paul Whitaker, in particular, has been giving the subject much care, and as it will have a function for some time yet, we would suggest that the committee be continued under his chairmanship.

The observation may be made without political bias, we hope, that the Federal administration apparently is awakening to the rapidly mounting deficit and to the failure of tax revenue to come up to expectations for reduction of governmental expenditures. This, together with the fear of mounting taxes, should have a powerful deterrent effect upon the passage of any legislation adding to the tax burden as would the Wagner bill.

Dr. L. B. McBrayer, *Secretary*,
Dr. Paul H. Ringer,
Dr. W. C. Bostic,
Dr. T. G. Upchurch,
Dr. Benj. J. Lawrence,
Dr. Paul F. Whitaker,
Dr. M. P. Whichard,
Dr. Forest M. Houser,
Dr. D. W. Holt,
Dr. Geo. L. Carrington,
Dr. Thos. L. Carter,
Dr. Wingate M. Johnson, *Chairman*.

President Strosnider: You have heard the report of this committee. What is your pleasure?

Dr. W. M. Coppridge: I move it be accepted.

. . . The motion was duly seconded. . .

President Strosnider: All in favor of this motion make it known by saying, "Aye"; opposed, "No." The motion is carried.

SECRETARY LONG: Next is the report of the State Board of Medical Examiners, Dr. Lawrence, I presume, the Secretary.

PRESIDENT STROSNIDER: Is Dr. Lawrence in the room? If not, we will go ahead to the next report.

SECRETARY LONG: The report of the delegates to the American Medical Association.

DR. WINGATE M. JOHNSON (Forsyth County): Dr. Stevens and I were delegates to the meeting.

. . . Dr. Johnson then presented his report. . .

REPORT OF DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

Both your delegates attended every meeting of the House of Delegates of the A. M. A., held last year in Kansas City. Both of us were impressed with the democratic spirit, the serious purpose, and the high order of intelligence of that body.

There was one feature of unusual interest. For the first time in its history, the President-elect was unable to be present. Dr. J. Tate Mason was seriously ill, dying shortly after the meeting. His address was read by Dr. Brian King, his personal physician. The Judicial Council, in giving its report, gave the opinion that the situation was covered by Article 6, Section 2 of the Constitution of the A. M. A., which states that the officers of the Association "shall be elected annually and, except the Trustees, shall serve for one year or until their successors are elected and installed," and Chapter IV, Section 8 of the By-laws: "The President shall be installed at the opening meeting of the Scientific Assembly of the annual session following that at which he was elected." The interpretation of the Judicial Council was that Dr. McLester should continue in office for another year. Although the Judicial Council is the Supreme Court of the A. M. A., this decision was reversed in short order by the House. A motion "to install Tate Mason tonight if he is living" was passed without a dissenting vote.

Dr. J. H. J. Upham of Ohio was elected President-elect, and Dr. Charles Gordon Heyd of New York, Vice-president. Dr. Heyd's election was really equivalent to making him president, for Dr. Mason died shortly afterwards. Atlantic City was selected as the meeting-place for the 1937 meeting, winning over Philadelphia by a vote of 70 to 69.

A resolution introduced in the House requesting the various states to tighten up in the matter of dealing with violators of the Harrison narcotic law placed North Carolina in an unfavorable light, since it was disclosed that one of the two most flagrant violations of this law occurred in North Carolina.

Dr. Nathan B. van Etten, of New York, who succeeded Dr. F. C

Warnshuis of California as Speaker of the House, made an admirable presiding officer. His address, and those of President McLester, President-elect Tate Mason, the reports of the officers of the Association, and the minutes of the meetings, have been published in full in the Journal of the A. M. A., so need not be reviewed here. It may be of interest to note, however, that the membership of the A. M. A. reached its highest point with an enrolment on March 1, 1936, of 101,946.

Respectfully submitted,

DR. M. L. STEVENS,
DR. W. M. JOHNSON,
Delegates.

PRESIDENT STROSNIDER: You have heard the report of our delegates. What is your pleasure?

DR. E. A. LIVINGSTON (Scotland County): I move the report be accepted.

. . . The motion was duly seconded. . .

PRESIDENT STROSNIDER: All those in favor say, "Aye"; opposed, "No." The motion is carried.

SECRETARY LONG: The report of Councillors. I have the First District report here from Dr. Williams, who had to be absent. He said in the interest of brevity he would file it and it would be published in the TRANSACTIONS.

. . . The report of the First District Councillor is attached to this report. . .

REPORT OF COUNCILLOR OF FIRST DISTRICT

Mr. President and Members of the House of Delegates, Gentlemen:

On account of the small size of the counties of the First District it is impossible to have a county society in each county, so we come together and function as a unit in our District Society.

We have had two district meetings during the year; each meeting was well attended, very good scientific papers were read, in addition the economic side of medicine was freely discussed.

During the year we have had a post-graduate course in obstetrics for five days conducted by Dr. Schnider, of Baltimore. This was attended by practically all of the physicians of the district.

The profession in the First District is in a healthy condition in every respect.

C. B. WILLIAMS, M.D.,
Councillor of the First District.

PRESIDENT STROSNIDER: The report of the Second District Councillor, Dr. K. B. Pace.

. . . The report of the Second District Councillor was presented. . .

REPORT OF COUNCILLOR OF SECOND DISTRICT

Mr. President and Members State Medical Society:

As Councillor for the Second District I wish to make the following report: Monthly meetings are being held in several of the counties. We are endeavoring to get the remaining counties to do the same thing. The district meetings have been increased from one a year to two a year; one being held in Morehead City in September and one in Washington in February.

Signed:

K. B. Pace,
Councillor Second District.

President Strosnider: The report of the Third District Councillor, Dr. J. F. Robertson. (No response)

The report of the Fourth District, Dr. E. S. Boice. (No response)

The report of the Fifth District, Dr. Roscoe McMillan. (No response)

The report of the Sixth District, Dr. W. M. Coppridge.

Dr. W. M. Coppridge (Durham): Mr. Chairman, I am sorry I don't have a written report. I can turn in one, though, before the meeting is over.

President Strosnider: The report of the Seventh District, Dr. Forest M. Houser.

Dr. Forest M. Houser (Cherryville): I would like to ask permission to present my report by title only.

REPORT OF COUNCILLOR OF THE SEVENTH DISTRICT

Mr. President and Members of the House of Delegates:

I have a very short report to make this year.

It has been my pleasure to be able to attend all of the meetings of the Executive Committee that has been called by the President the past year. I have visited with practically all of the county medical societies in my district at least once during the year. On my visits I found all of the societies doing exceptionally well.

Our district has only one meeting during the year, always in the fall. This year our meeting was held at Gastonia, we had a very large attendance and a splendid program. Dr. Hammond of Baltimore was our guest. He held a heart clinic in the afternoon, and was the main speaker at the banquet in the evening. At the time of our meeting our wives formed the Seventh District Auxiliary.

Respectfully submitted,

F. M. Houser,
Councillor of the Seventh District.

PRESIDENT STROSNIDER: The report of the Eighth District, Dr. R. C. Mitchell.

. . . The report of the Eighth District Councillor is attached to this report. . .

REPORT OF COUNCILLOR OF EIGHTH DISTRICT

Mr. President and Members of the House of Delegates:

I herewith submit my report as Councillor of the Eighth District for the past year. There have been two district meetings, one at Leaksville, Tuesday, November 24, 1936, and one at High Point, Thursday, April 8, 1937. I herewith attach the programs of both meetings which include the names of the officers and guest speakers.

The scientific papers in these programs were well prepared and were well discussed. The discussions of the problems of medical practice indicate a stronger sentiment for class action by organzied medicine than ever before.

No matter has arisen within the district requiring the attention of the councillor for its adjustment.

PROGRAM—EIGHTH DISTRICT MEDICAL SOCIETY

Tuesday, November 24, 1936

Community Club House—Leaksville, N. C.

President.....Carl V. Tyner, M.D., Leaksville
Vice-President.....John W. McGehee, M.D., Reidsville
Secretary-Treasurer.....John B. Ray, M.D., Leaksville
District Councillor.....Roy C. Mitchell, M.D., Mount Airy

AFTERNOON SESSION—TWO-THIRTY O'CLOCK

Leaksville Community Club House

(Paper by members limited to 20 minutes, and discussion to 10 minutes)

Address of Welcome by George H. Clark, Mayor of Leaksville.

1. "Clyclopropane-Avertin Anesthesia"—Roscoe L. Wall, M. D., Winston-Salem.

2. "Tuberculosis in Children"—M. D. Bonner, M.D., Jamestown.

3. "Bloody Diarrhea—Etiology and Treatment"—Julian M. Ruffin, M.D., Duke University, Durham.

4. "Gynecological Aspects of Backache"—James F. Marshall, M.D., Winston-Salem.

5. "Pyuria in Infants and Children—Etiology and Treatment"—Marion Y. Kieth, M.D., Greensboro.

Business.

Election of Officers.

Selection of Place of Next Meeting.

Evening Session—Seven o'Clock

Leaksville High School Dining Room

Dinner for Members and Guests.

Entertainment—under direction of Mrs. H. E. Latham.

Introduction of Special Guests.

Guest Speaker—Dr. Thurman D. Kitchin, President Wake Forest College.

Registration-Membership Fee	$2.00
Ladies	1.00
Visiting Doctors	1.50

(Above includes dinner)

PROGRAM—EIGHTH DISTRICT MEDICAL SOCIETY

Thursday, April 8, 1937, Sheraton Hotel, High Point, N. C.

OFFICERS

President.....H. L. Brockmann, M.D., High Point, N. C.
Vice-President.....M. D. Bonner, M.D., Jamestown, N. C.
Secretary-Treasurer.....E. T. Harrison, M.D., High Point, N. C.
District Councillor.....Roy C. Mitchell, M.D., Mount Airy, N. C.

Afternoon Session

2 o'Clock, Sheraton Hotel

(Papers by members limited to 20 minutes and discussions to 10 minutes)

A Message from Dr. Wingate M. Johnson, Winston-Salem, N. C., President-elect of the North Carolina State Medical Society.

1. "Some Medical Aspects of Life Insurance"—Dr. H. F. Starr, Sedgefield, N. C., Medical Director Pilot Life Insurance Company.

2. "Thoracic Surgery in Chronic Pleuropulmonary Disease"—Dr. Russell O. Lyday, Greensboro, N. C.

3. "Presentation of a Case of Yaws, or Framboesia, in North Carolina"—Dr. Wortham Wyatt, Winston-Salem, N. C.

4. "Modern Trends in Prenatal Diets"—Dr. Eva F. Dodge, Winston-Salem, N. C.

5. "Some Phases of Nephritis in Children"—Dr. Samuel F. Ravenel, Greensboro, N. C.

Business.

Election of Officers.

Selection of Place of Next Meeting.

EVENING SESSION

6:30 o'Clock—Sheraton Hotel Ballroom

Dinner for Members and Guests.

Music.

Introduction of Special Guests.

Guest Speaker—Dr. Paul Ringer, Asheville, N. C.—"Differential Diagnosis of Pulmonary Disease."

Registration-Membership Fee	$2.00
Ladies	1.00
Visiting Doctors	1.50

(Above includes dinner)

Respectfully submitted,

ROY C. MITCHELL, M.D.,
Councillor Eighth District.

PRESIDENT STROSNIDER: The report of the Ninth District, Dr. J. R. Terry.

SECRETARY LONG: He has already turned his in.

. . . The report of the Ninth District Councillor is attached to this report. . .

REPORT OF COUNCILLOR OF NINTH DISTRICT

I am happy to report that all goes well with the Ninth District Medical Society. Peace and harmony prevails throughout the entire district so far as I know.

The Ninth District holds one district meeting each year. The last meeting was held at Salisbury, N. C., on September 29, 1936. The meeting was well attended. The Rowan County Medical Society proved to be a royal host, putting on a magnificent banquet at the Salisbury Country Club. Our next meeting will be held at Hickory, N. C., in September.

The attendance at the different county medical societies is unusually good. I think our district will compare favorably with any district in the State, in comparison as to members of the State Medical Society.

Respectfully submitted,

J. R. TERRY, M.D.,
Councillor of Ninth District.

PRESIDENT STROSNIDER: The report of the Tenth District, Dr. G. W. Murphy.

. . . The report of the Tenth District Councillor is attached to this report. . .

REPORT OF THE COUNCILLOR OF THE TENTH DISTRICT

It is with regret that I come to the end of my term as Councillor of the Tenth District. My association with the other members of the Executive Committee has been an inspiration and a genuine pleasure. I can only hope for my successor that he will receive the same fine coöperation from the physicians throughout the district as has been given to me and that he will find the new Executive Committee to be composed of the same type of intelligent gentlemen as is the retiring one.

Medical affairs in the Tenth District are in good condition. There is an ever-increasing desire on the part of our doctors to work in harmony with each other and together for the good of organized medicine. My greatest wish is that this spirit will continue until there is developed in the profession an irresistible force to work for the good of all concerned. Both as an individual and as a councillor, I trust that the Medical Society of the State of North Carolina will maintain the dues at a level which will permit the affairs of the Society to be carried an as efficiently as during the past two years.

Respectfully submitted,

G. W. Murphy, M.D.,
Councillor Tenth District.

President Strosnider: The Board of Directors seems to be conspicuous by its absence, gentlemen.

I want to say that these gentlemen were present, practically all of them attended every meeting, except two, I think, and they had previous engagements and could not attend. But they made a good record during their term of office. I want to speak in their behalf even though they are absent tonight. Of course, a practitioner is usually in bed at this hour.

Gentlemen, is there any further business to come before the house? If not, the house stands adjourned until three-thirty Wednesday afternoon, the last session.

. . . The meeting thereupon adjourned, at eleven-thirty o'clock. . .

MINUTES OF THE HOUSE OF DELEGATES

Wednesday Afternoon, May 5th, 1937, 3:30 *o'*Clock

. . . The House of Delegates was called to order at 3:30 p. m. by President Strosnider in room 102.

The President called for the report of the Nominating Committee and the Chairman, Dr. W. D. James, presented the following:

OFFICERS

President-elect—Dr. J. Buren Sidbury.....Wilmington
First Vice-President—Dr. R. B. McKnight.....Charlotte
Second Vice-President—Dr. J. F. Abel.....Waynesville
Secretary-Treasurer—Dr. T. W. M. Long (1937-1940)....Roanoke Rapids

COUNCILLORS 1937-40

First District—Dr. H. D. Walker.....Elizabeth City
Second District—Dr. Paul F. Whitaker.....Kinston
Third District—Dr. W. Houston Moore.....Wilmington
Fourth District—Dr. Geo. W. Mitchell.....Wilson
Fifth District—Dr. W. D. James.....Hamlet
Sixth District—Dr. George Carrington.....Burlington
Seventh District—Dr. B. H. Kendall.....Shelby
Eighth District—Dr. R. C. Mitchell.....Mount Airy
Ninth District—Dr. J. R. Terry.....Lexington
Tenth District—Dr. Julian Moore.....Asheville

COMMITTEES

Medical Society Foundation

Dr. John Q. Myers (4 years).....Charlotte
Dr. W. S. Rankin (3 years).....Charlotte
Dr. L. C. Skinner (2 years).....Greenville
Dr. C. C. Orr (1 year).....Asheville

Obituaries

Dr. Fred R. Taylor, Chairman.....High Point
Dr. J. P. Matheson.....Charlotte

Legislation

Dr. Hubert B. Haywood, Chairman.....Raleigh
Dr. H. A. Newell.....Henderson
Dr. J. S. Gaul.....Charlotte

Moore County Medical Society Medal

Dr. J. S. Milliken, Chairman.....Southern Pines
Dr. Thurman D. Kitchin.....Wake Forest
Dr. I. H. Manning.....Chapel Hill

Hospitals

Dr. J. W. Gibbon.....Charlotte
Dr. W. I. Wooten.....Greenville
Dr. T. V. Goode.....Statesville

Cancer

Dr. H. B. Ivey, Chairman.....Goldsboro
Dr. C. C. Carpenter.....Wake Forest
Dr. Thos. L. Lee.....Kinston

Public Relations

Dr. D. W. Holt, Chairman.....Greensboro
Dr. T. W. M. Long.....Roanoke Rapids
Dr. P. P. McCain.....Sanatorium

Advisory to Industrial Commission

Dr. Donnell B. Cobb, Chairman.....Goldsboro
Dr. Battle A. Hocutt.....Clayton
Dr. Frank C. Smith.....Charlotte

Finance

Dr. Vance P. Peery, Chairman.....Kinston
Dr. Westbrook Murphy.....Asheville
Dr. W. M. Coppridge.....Durham

Printing

Dr. T. W. M. Long, Chairman.....Roanoke Rapids
Dr. B. C. Willis.....Rocky Mount
Dr. E. C. Judd.....Raleigh

Post-Graduate Medical Study

Dr. C. L. Sherrill, Chairman.....Statesville
Dr. James W. Vernon.....Morganton
Dr. Paul H. Ringer.....Asheville

Member Advisory Committee on Maternity and Infancy for Children's Bureau

Dr. W. C. Davison.....Durham

Syphilis Control

Dr. J. C. Knox, Chairman.....Raleigh
Dr. Louis C. Skinner.....Greenville
Dr. Hamilton W. McKay.....Charlotte

Social Security Act

Dr. Wingate M. Johnson, Chairman.....Winston-Salem
Dr. L. B. McBrayer, Secretary.....Southern Pines
Dr. Paul H. Ringer.....Asheville
Dr. W. C. Bostic.....Forest City
Dr. T. G. Upchurch.....Smithfield
Dr. Benj. J. Lawrence.....Raleigh
Dr. Paul F. Whitaker.....Kinston
Dr. M. P. Whichard.....Edenton
Dr. Forest M. Houser.....Cherryville
Dr. D. W. Holt.....Greensboro
Dr. Geo. L. Carrington.....Burlington
Dr. Thos. L. Carter.....Gatesville

To Study Four-Year Medical School

Dr. C. F. Strosnider, Permanent Chairman ..... Goldsboro
Dr. Benj. J. Lawrence ..... Raleigh
Dr. James W. Vernon ..... Morganton
Dr. K. B. Pace ..... Greenville
Dr. L. B. McBrayer ..... Southern Pines
Dr. Hubert B. Haywood ..... Raleigh
Dr. W. D. James ..... Hamlet
Dr. C. C. Carpenter, Dean, Wake Forest Medical School ..... Wake Forest
Dr. C. S. Mangum, Dean, Medical School of the University of North Carolina ..... Chapel Hill

Delegates to American Medical Association

Dr. John Q. Myers (1937-38) ..... Charlotte
Dr. M. L. Stevens (1938-39) ..... Asheville
Dr. James G. Pate (alternate) ..... Gibson
Dr. W. T. Rainey (alternate) ..... Fayetteville

Delegates to Medical Society of Virginia

Dr. F. H. Gariss ..... Lewiston
Dr. W. G. Suiter ..... Weldon
Dr. B. M. Nicholson ..... Enfield
Dr. Paul F. Whitaker ..... Kinston

Delegates to South Carolina Medical Society

Dr. J. A. Elliott ..... Charlotte
Dr. L. T. Buchanan ..... Laurinburg
Dr. J. Buren Sidbury ..... Wilmington

Meeting Place 1938 ..... Pinehurst

Respectfully submitted,
W. D. James, M.D., *Chairman.*

Dr. Grady Dixon offered an amendment to the report that we elect delegates to both Georgia and Tennessee Medical Societies, which was unanimously adopted, Dr. Dixon adding to the motion that the incoming president and secretary supply these names.

President Strosnider asked for any unfinished business.

Dr. Julian Moore suggested it had come to his attention that the Commissioner of Revenue had ruled that the expenses of a physician to medical meetings is not deductable. Dr. Moore offered a resolution that the Legislative Committee investigate the matter and prosecute it to a definite conclusion. Dr. Moore offered the amendment that the Legislative Committee should not spend over $400.00 for this investigation. Motion seconded and unanimously carried.

Dr. Mangum asked the courtesy of the floor to present a matter stating that the proper man was not present but at that moment Dr. Northington entered the room and took the floor. Dr. Northington stated several weeks ago Dr. W. J. Lackey of Fallston asked him to come to the hotel and from that developed the sending out of some cards to general practitioners to organize a meeting of general practitioners during the meeting of the State Medical Society, that time being chosen because a good many men would be present. Some sixty practitioners were present and something near a hundred represented by letter. After discussion it was unanimously voted that a demand be made on the State Medical Society that the Society from now on establish a Section on the General Practice of Medicine and Surgery and provision be made for a program in that section at the next annual meeting, and in as much as it is necessary to have officers for this section, that officers for the first section be Dr. W. J. Lackey, Chairman.

Dr. Mangum made a motion that the House of Delegates endorse this petition of the general practitioners and refer the matter to the Executive Committee for action.

Dr. McBrayer stated he had heard considerable about this and had talked with a number of men and thought it was quite worthy of a trial. That a committee of the Chairman and whoever else was on the committee for this meeting meet with the Executive Committee and try to work this out so it will be satisfactory to everybody and put the matter in effect immediately for the next meeting, Dr. McBrayer seconding the motion.

Dr. Mangum re-stated the motion that this petition of the general practitioners be approved by the House of Delegates, that it be referred to the Executive Committee for action and that Dr. Lackey and Dr. Northington and Dr. Mangum be appointed a committee to appear before the Executive Committee and help work it out.

Dr. Strosnider asked for a vote on the matter and it was unanimously carried.

President Strosnider called for any further business.

Dr. Millard D. Hill made a motion that the State Secretary shall provide blanks for any member wishing to transfer his membership from one county society to another, and these blanks being filled out by the County Secretary where name appears, in duplicate. One blank to be forwarded to his or her future County Society Secretary, the other one to be forwarded directly to the State Secretary, so both County and State records may remain clear. Any county society not following this channel shall not be credited with new member until this procedure is executed.

Motion seconded and unanimously adopted.

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS

Mr. President and Members of the Medical Society of the State of North Carolina:

Your Committee on the President's Address offer the following report:

First: We wish to commend the high grade of medical service they envision and the comprehensive grasp of medical affairs in the State they show.

Second: We approve in general all recommendations made but particularly wish to call attention to the remarks about the great importance of the office of Councillor. We also strongly urge that necessary action be taken as soon as possible to have only a part of the councillors elected every year, so that a majority of the Executive Committee shall have had previous experience in dealing with the Society's affairs.

Respectfully submitted,

I. H. Manning,
P. P. McCain,
W. M. Johnson,
Committee.

No further business appearing, on motion the House of Delegates adjourned sine die.

PROCEEDINGS

EIGHTY-FOURTH ANNUAL SESSION

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

WINSTON-SALEM, NORTH CAROLINA
MAY 3-5, 1937

FIRST GENERAL SESSION

TUESDAY MORNING, MAY 4, 1937

The First General Session of the Eighty-Fourth Annual Meeting of the Medical Society of the State of North Carolina convened at nine-fifty o'clock in the Ball Room of the Robert E. Lee Hotel, Winston-Salem, North Carolina, Dr. Paul A. Yoder, Chairman of the Committee on Arrangements, presiding.

CHAIRMAN YODER: The First General Session of the Eighty-Fourth Annual Meeting of the State Medical Society will please come to order.

Just before the program for today's first general session starts, there are a couple of announcements that the local committee would like to make.

Of course, as all of you know, it is the custom of this Society not to have a series of addresses of welcome, or replies, and I think it is very well that we have dispensed with that.

The local committee here in Winston-Salem have worked hard and tried to arrange a program that would be of some scientific interest, and also contribute something to the pleasure of the guests who have so kindly visited our city. We are not going to welcome you with words, at all, but we are going to try to show you that you are welcome to Winston-Salem. If there is anything you think of that you want and can't find, ask for it and we will make a valiant effort to get it for you.

The announcements I want to make are very few and very brief.

. . . Announcements were made concerning the golf tournament and various other matters. . .

CHAIRMAN YODER: I hope you are enjoying your stay here. Mrs. Sprunt, the Chairman of the Ladies' Entertainment Committee, and Dr. Cooke, the president of the local society, and all of the committee members, have done what they could to provide a program of entertainment that we hope will be fairly satisfactory.

Of course we are delighted to see all of you here and we hope that you will come back in a short time again.

To get on with the program, the gentleman whom I have the honor to introduce to this group certainly needs no introduction here. I will just say that we will now hear from our president, Dr. C. F. Strosnider, of Goldsboro.

Dr. Strosnider! (Applause)

President Strosnider: Mr. Chairman and Friends: It is a great pleasure to be here today. It is always a genuine pleasure for those of us who love organized medicine, who love to work in the ranks, to meet and to get ideas, disseminate them, working one and all for the advancement of scientific medicine.

. . . President Strosnider then read his prepared paper. . . (Applause)

FOR THE GOOD OF THE PROFESSION

By C. F. Strosnider, M.D., Goldsboro, N. C.

Members of the Medical Society of the State of North Carolina and Guests:

Nothing is to be more highly prized or appreciated by any physician in North Carolina than the office which I have occupied this year—that of President of the Medical Society of the State of North Carolina. I can assure you that no one could appreciate it more, and no one can be more keenly conscious of the obligations and responsibilities which it entails.

My endeavor has been to evidence an appreciation by self-forgetful service in the performance of the duties of the high office. Mistakes I have made, but I have the consolation of knowing that such mistakes were human. Again no one can say that I have not made an honest effort to do my duty, as I interpreted the present and future needs or interests of our profession.

It is customary for the President to suggest to you in what ways the work of the Society may be improved, reiterating those principles which underlie the work of the doctor, and announcing the present relations of the Society to its individual members; to the medical profession; to the public and to the institutions with which it must come into close contact.

It is most comforting to know that despite the hardships and discouragement of the times the quality and quantity of service of the doctors to all the people has not been lowered.

For the good of the profession, I would like to discuss with you the present-day progress and problems of our profession. These include those things which improve the doctor; the doctor and his duty to society; the doctor and his public; the doctor and his organization and leadership.

The primary purpose of the doctor in this Society is to make quickly available by pamphlet, by demonstration, and by lecture every fact and every truth of advancing medical science in order that their usefulness may be rapidly placed at the service of the sick. This we are doing through

the medium of special papers, lectures, post-graduate group work in clinical subjects, and intensive study by section or committee of special lines, of which divisions of public health, prevention of disease, maternal and infant welfare, and advocating protective health legislation for the people.

Our profession has always realized its responsibility to the public. Therefore, the doctor is solicitous for the general increase of medical knowledge on the part of the public. The public should know the progress in medical science, the applicability of that progress to the present-day needs and the limitations still existing. It should know the real miracles of medicine. It should know the results to be obtained in immunization, in the reduction of mortality and morbidity, and in the eradication of such diseases as typhoid fever, malaria fever, undulant fever, typhus fever, diphtheria and the vitamin deficiency disorders. It should know the ever-increasing accomplishments of surgery, the continuous efforts and ways to reduce dangers in child-birth; and, the never-ceasing work of the doctor in the seemingly hopeless warfare against cancer.

For its own protection the public should be acquainted with the qualifications required, the training at very great cost, and the licensing of men and women in medicine, and the reasons why the medical profession opposes the quack, the cultist and the irregular practitioner.

The public should know about the economic methods of medicine. It is surprising what little it does know of the costs and needs of medical care, the explanation of these costs, the amounts, the methods and the reasons for remuneration. The public, informed, can be trusted, as evidenced by the effect of the recent propaganda in more than a thousand colleges and high school debates on socialized medicine which fell far short of the expectations of the promoters.

The public should know how the Society strives to increase in knowledge and skill the qualifications of its members by lectures, demonstrations, and the post-graduate courses, but it must never lose sight of the fact that the lectures and advice given to an individual or his family by the family physician, after careful examination, carry the most value.

This Society would have the public know how its prospective members are scrutinized and selected; that membership carries increased obligations and responsibilities; that the county medical society should and does guarantee the qualifications and character of its members; that non-membership places a doctor on the defensive. With this knowledge the public, in my opinion, will coöperate with us for its own good.

The public should be acquainted with the contribution which the doctors are making in assisting the hospitals and dispensaries in meeting the unusual demands made for medical and surgical care.

Therefore, the present work and the future of the general hospitals are matters of great concern to us, as doctors. The demands of our times, with the lack of facilities and accommodations in the small apartments for home treatments, the plans for increased social security, the unusual require-

ments in accommodations and hospital luxuries, and the service that may be required in the future for all those now becoming pensioners of the government through social security programs, have been making and will make still further radical changes in hospital service.

No one knows better than the doctor the amount of good that has been done by these institutions. No one appreciates more the assistance that they are to the doctors in caring for the sick. Everyone should know how freely doctors have given of their services to further those real purposes that have distinguished the hospitals.

I believe that the appointment of staff doctors to the board of trustees of the hospitals would be extremely helpful to all concerned. They could show the usefulness of certain departments—would protect against extravagances, and would contribute their experience and judgment to the routine business measures. As proof of my contention, I cite the numerous private hospitals which are controlled and conducted by physicians in our State. These hopitals are conducted in such an efficient manner as to reflect great credit on those in authority.

We are encouraged to look with great hope on the future of our Hospital Savings Association to secure hospital care for the low income group of our citizens. This plan applies many principles which we hold to be sound. The hospital is paid in full for services rendered. The patient selects his own physician and his own hospital. The insurance is voluntary in a corporation not organized for profit. The Hospital Savings Association has gone a long way in assisting in solving the acute economic situation of our hospitals but the economic situation as it affects the doctors and the patients remains a problem which is attracting the attention of the public as well as our profession.

In the conditions and circumstances of the past few years, however, many individuals and agencies, well intentioned as they may have been, professional and amateur sociologists, often seeking their own advancement, have seized the occasion of this depression to propose for us new and ill-founded legislative measures, which we know would be destructive of the present high quality of medical care and the immense volume of that care which is now at the service of the people. No one, no group and no system has ever suggested a lessening of the quality of medical care, or a modification of the ethical standards of the profession.

This Society should study any and every plan for improvement, no matter by whom or when proposed, not for the purpose of detecting faults, but with an anxious desire to discover contributions. Any modification of existing methods that will more quickly bring the advances of medical science to their fullest possibility, and to the permanent benefit of the people, must be adopted.

The man out on the firing line best suited to detect and apply the proper remedies is the modern general practitioner. Thus it is that as an economic factor I submit to you the question of the general practitioner

and suggest his restoration to the central place in caring for the sick. We should acquaint the public, for its own good, with the qualifications of the general practitioner. It should know his ability in the treatment of their ailments as well as his ability to select specialists and hospitals. At the present time in the less populous sections of our State, he is in great demand. The small towns and many rural sections of our State are making frequent requests for doctors—the supply is small and the demands are numerous. As a profession, what are we going to do to relieve this situation?

Our sons and daughters are now receiving medical training up to and including the second year in medicine, the equal of those in our sister states—the four-year medical school in our State is international and is unable to accept all the State applicants applying for medical training. Therefore, the third and fourth year work in medicine is available to but comparatively few of those in our State who are qualified to receive such training. Hence, they must go out of our State to complete their medical education.

As a doctor, citizen and tax-payer, I am convinced by my past year's experience and a study of the statistics of our annual needs and our annual source of supply of doctors, that our State University should, as soon as possible, accept the responsibility and the opportunity of establishing a four-year grade A medical school so that every boy and girl in our State, qualified to study medicine, may be given the opportunity to burgeon out his or her medical education. Our profession has been privileged to initiate a movement by our State to meet the medical needs of our people. I am now asking that we demonstrate our interest, loyalty, and faith in this historic cause by putting every resource in our possession at the disposal of our State in her desire to investigate the medical needs of our people and to devise ways and means to make available accommodations suitable to meet the requirements of a four-year grade A medical school.

A medical school supplying the medical needs of our State would greatly assist our profession in meeting the rising tide in our manifold professional relationships with our government in caring for the sick and injured, especially the indigent and low income group of our citizens. So many plans have been suggested to our government and our profession in the recent past, to care for the low wage group, that our government, through its Social Security Board, is now investigating various systems of socialized medicine in foreign countries. In caring for the sick by foreign governments, state medicine, the plans of socialism and compulsory health insurance have demonstrated their many weaknesses. In no one of these foreign countries do the public health, the loss of sickness time, or the mortality rates compare favorably with our own—furthermore, in no country is the quality of medical care given to the under-privileged individual equal to our own.

Every individual sick person should be cared for by a doctor of his

choice. Every sick indigent person, whether at his home, at a clinic, or at a hospital, should receive all necessary care, at a reasonable price, and that care should be paid for by the local government. No government body, lay group or bureau should dictate the amount of treatment to anyone sick, the number of visits that may be made to a patient, or the kind or cost of medicine that may be given, nor the kind of operation that may be performed, or who may perform them. These are strictly medical questions.

There is a place for lay groups in social, economical, and educational branches of health and sanitation—there is an immense field in which such groups may assist the doctor and the sick but such workers may not tell a physician how he must treat a patient.

These changing and challenging conditions in our national life, can be accepted and utilized by our profession through the medium of an all-inclusive membership, a good organization and a trained leadership. In working for membership we are at the same time working for the accomplishment of all of our objectives. Every organization derives its strength, its power to achieve the purposes for which it was organized, through its membership. The organization that has a small number who subscribe to its program, cannot hope for a maximum of success in its activities. The established organization that has carried on a successful program must keep its membership growing and at work if it hopes to attain higher objectives and achieve more and better things. Therefore, we must work as individuals and as a unit to obtain one hundred per cent membership in our county medical societies.

To accomplish the ideal of one hundred per cent membership calls for that which is the paramount need of our profession in North Carolina and our national organization.

The day of individualization for individual security is in the past. You have observed that men and women of similar service are organizing for the purpose of their own and public welfare. This idea of organization is being fostered through the medium of legislation by our national government. It has recently been brought to our attention that numbers speak when it comes to putting an idea into practice, be it in the rural or urban section of our State or Nation. The individual doctor needs protection, now as never before. He has been most generous to the public with his time, talent and credit, but another day has dawned—lay groups are saying to themselves and the public, "The doctor is too busy to look after the poor sick—we must organize and direct him in his work." Thus we observe that the doctor must either lead or be led in the matters pertaining to health and the practice of medicine.

We have our traditions and our ideals to harmonize with a society organized along commercial lines—the latter demanding that doctors adopt its methods of mass treatment. This situation brings the doctor to the important day of decision in the matter of accepting a place of leadership

in solving the economic and social problems bound up in the practice of medicine.

Not only must we have a strong active organization, but to attain the desired ends it is most essential that we have a well trained and an enthusiastic leadership. Experience and observation confirms the age-old dictum that it is difficult to get doctors to accept leadership in the problems concerning our profession or the community—not that we are less qualified than others, but by the very nature of our training, leadership in our communities has been discouraged.

Wherever mass activity or interest is concerned, a group must either lead or be led—especially is this true in the case of the medical profession as is frequently evidenced by the fact that the doctors do the work and other groups get the credit. This is due to the lack of organized leadership. To remedy such matters, we must develop leaders from our own ranks, leaders who are broadminded medical men, capable, public-spirited and willing to serve the public in every capacity, be that service medical, economical or political. We must develop such leaders in every county medical society; and, having found such leaders, we must loyally support them in their execution of our ideals. A public thus served will appreciate and reverence the members of our profession for their generalized usefulness and efficiency to the end that medicine will fill a place in the public's esteem which it deserves, and the doctor thus serve humanity as he is destined to do here and everywhere.

President-elect Johnson: Members of the North Carolina State Society: One of the greatest satisfactions that can come to any man is the knowledge that he has been entrusted with a big task and has done it well. Dr. Strosnider, you have been entrusted by the doctors of North Carolina with the greatest responsibility and the highest honor that they can give to any doctor in North Carolina.

You have accepted the responsibility so nobly that you richly deserve the honor. As a perpetual reminder of the gratitude and the affection of your fellow-members of the Society, it is my pleasant privilege to present you with this jewel. (Applause)

President Strosnider: Dr. Johnson, and fellow-members of the Medical Society of North Carolina: This is a token of service which I shall ever remember and carry with me through the years—I hope they may be many—to serve with you and for you, through the many avenues of endeavor which are open to us, and to continue the fight to see that the people of this State get the best service it is possible to get from the profession of our State.

We should guard very carefully the honor and the privilege to serve. We should guard very closely those privileges that have been handed down to us from our forefathers. Agencies are at work endeavoring to divide us, in order that we may be destroyed. A bundle of sticks cannot be broken

easily, but once the bundle is separated into individual groups or single sticks, it is easily broken.

My friends, as long as we remain united as a bundle of sticks, no power can break us, but if forces come in and separate us into small groups then we shall be easily broken.

I thank you for this token of service. (Applause)

SECRETARY LONG: Mr. President, I move that the Chair appoint a committee, the chairman of which shall be the President-Elect, on the president's address.

. . . The motion was duly seconded. . .

SECRETARY LONG: As many as are in favor of that motion say, "Aye"; opposed, "No." The "Ayes" have it. (Laughter)

PRESIDENT STROSNIDER: In addition to Dr. Johnson, I will appoint Dr. Isaac Manning and Dr. Paul McCain on that committee.

We have some telegrams which I will ask the Secretary to read at this time, please.

SECRETARY LONG: "Dr. C. F. Strosnider, President, North Carolina State Medical Society. Dr. Murphy desperately ill at Duke Hospital. He had planned to attend State meeting. We pray for a successful meeting. Our greetings to the doctors of North Carolina and congratulations to you. Mrs. W. B. Murphy."

From Atlanta, Georgia: "Dr. C. F. Strosnider: Greetings and good wishes. I hope you are having a very successful annual meeting. Fraternally, Frank K. Boland, President of the Southern Medical Association."

PRESIDENT STROSNIDER: If there are no objections I will direct the Secretary to reply to these telegrams.

We have with us today two fraternal delegates from Georgia. I will ask these gentlemen to stand.

Dr. Grady N. Colter of Canton, Georgia, and Dr. C. L. Ayers of Taccoa! (Applause)

We are delighted to have you with us, my friends, and I dare say the privilege of the floor in the various sections will be extended to you. We will be happy to have you enter into the discussions of the various papers which are presented in the sections in which you are interested.

We will ask you to extend and carry back with you the greetings and good wishes of the medical profession of North Carolina.

We will now have a report of the Committee on Award of the Moore County Medical Society Medal for the best paper read in the 1936 session, and the presentation of the medal.

Is Dr. Mudgett here?

SECRETARY-TREASURER EMERITUS MCBRAYER: Mr. President, Dr. Mudgett expected to be here last night and this morning, but is detained.

Dr. MacNider, another member of the committee, is in Philadelphia, I believe, at this particular time. Is Dr. Hart of Duke University present? He does not seem to be here.

The Secretary only got the report of this committee last night. It is a very able committee. They never agree on a man; that is, the surgeon on that committee always votes for somebody who has read a paper on some other topic than surgery. The research professor, Dr. MacNider, always votes for a paper on some general subject. That is mostly facetious, but it is a fact that Dr. Mudgett usually has to untie the vote. So that I didn't know who was going to get the medal until last night.

They have given the medal to Dr. V. K. Hart of Charlotte, for the best paper read at the last session. Dr. Hart had arranged with his co-workers to stay at home this time and let the others go away. We got Dr. Smith on the telephone and asked him if Dr. Hart could come down. He said he would get in touch with Dr. Hart, but didn't think he could possibly leave. Otherwise, Dr. Hart would, no doubt, have made arrangements to be here to receive this medal.

I would like to make a motion, Mr. President, that Dr. John Q. Myers be instructed to confer this medal on Dr. Hart at a regular meeting of the Mecklenburg Medical Society.

Ordinarily, I am opposed to anybody receiving the medal who doesn't think enough of it to be present when it is conferred, but this is entirely a different situation. It was out of the control of all of us, except the committee, and the committee thought they would be giving the medal themselves. They chose not to let us know who was to receive it, and that made it impossible for Dr. Hart to be present, as he knew nothing about it in advance.

If I had known it the day before yesterday, I would have wired him to come, but I didn't, and I therefore make that motion.

President Strosnider: Do I hear a second to Dr. McBrayer's motion?

. . . The motion was duly seconded. . .

President Strosnider: All in favor of this motion make it known by saying "Aye"; opposed, "No."

Dr. Myers, will you convey to Dr. Hart our congratulations for this outstanding piece of work; it must have been one, it took the committee so long to come to a conclusion on it.

Dr. John Q. Myers (Charlotte): Thank you very much. I shall be very glad to do that.

. . . Dr. McBrayer turned the medal over to Dr. Myers. . .

Secretary Long: Next is the report of the Obituary Committee, Dr. J. F. Abel, chairman.

Dr. J. F. Abel (Waynesville): We now leave off the problems of our

daily work and pay tribute to the memory of the members who have died during the past year. The other member of the committee cannot attend the meeting today. Dr. Bandy, who is representing him, will read the list of the dead and their addresses.

. . . Dr. Bandy then read the list of North Caorlina doctors who have died during the year. . .

NORTH CAROLINA DOCTORS WHO HAVE DIED DURING THE YEAR

*Ashecraft, J. E. (Honorary Fellow) ..... Fayetteville
*Averitt, H. O. ..... Cedar Creek
Best, Benjamin Williams ..... Greensboro
Bulla, Mora S. ..... Elizabeth City
*Cheek, C. E. ..... Fuquay Springs
*Cheeseborough, Thomas Patton (Honorary Fellow) ..... Asheville
Costner, Thomas F. ..... Lumberton
Courie, Wadie F. ..... Kinston
*Davis, F. M. ..... Greenville
Dowdy, James E. ..... Sandy Ridge
*Drewry, William H. ..... Charlotte
Duncan, G. F. ..... Elkin
*Evans, Leslie B. (Honarary Fellow) ..... Windsor
Farrar, W. H. ..... Hickory
*Garrison, David A. (Honorary Fellow) ..... Gastonia
*Gray, Eugene Price ..... Winston-Salem
Higgins, T. H. ..... Traphill
Hunter, Marcus Cyrus ..... Huntersville
Johnson, R. Lee ..... Gastonia
*Kluttz, DeWitt ..... Washington
Lewis, Henry W. ..... Weldon
*Long, Everette Fletcher ..... High Point
*Long, J. W. (Honorary Fellow) ..... Greensboro
*Melvin, Wayman C. (Honorary Fellow) ..... Linden
*McGregor, Geo. D. ..... Charlotte
Maness, John Moses ..... Hamlet
Meares, William B. ..... Lexington
Nisbet, W. Olin ..... Charlotte
*Parker, G. E. (Honorary Fellow) ..... Benson
*Patterson, Reid ..... Charlotte
Pearson, Raymond ..... Monroe
Perkins, S. L. ..... Wilkesboro
*Petrie, Robert Wm. (Honorary Fellow) ..... Murphy
*Redfern, Thomas Craig ..... Winston-Salem
Roberson, Mike ..... Durham
Rozier, Richard Gregory ..... Lumberton
Salls, Alfred ..... Oxford
*Smithwick, James Edwin (Honorary Fellow) ..... Jamesville
Stokes, J. Ernest ..... Salisbury
Williams, George E. ..... Valdese

*Members in good standing.

Dr. Abel: The grim reaper has not only defeated us in our work at many points during the past year, but entered our ranks and took a heavy toll. This we expect, but when the blow falls it brings a shudder of grief and a grim warning.

The work of most of these men was not finished. Their places cannot be filled. We mourn their loss.

To their families and community and friends, the Society extends its deepest sympathy.

These men have given of their time, thought and loyalty to the building of this Society to its present splendid proportions, and as a fitting tribute to their memory, let us resolve to better prepare ourselves for service to our patrons, and maintain and improve our beloved Society.

We will have just a few minutes, friends, and if someone would like to pay a short tribute to some of his friends, we can take time to do so.

OBITUARY OF DR. J. T. BURRUS

By Dr. W. C. Ashworth

(Also see Transactions, 1936)

Dr. John Tilden Burrus, M.D., F.A.C.S., died after a short illness, June 8, 1936, of a heart attack.

Dr. Burrus was born July 13, 1877, in Surry County, and crowded into fifty-nine years a distinguished career as surgeon, soldier, patriot, and statesman. He was graduate from Davidson Medical College in 1899, and immediately located in Jonesville, North Carolina. He subsequently moved to High Point in 1904, purchasing the Junior Order Hospital in 1909, and renamed it High Point Hospital, which is one of the State's outstanding general hospitals. Non-profit Burrus Memorial Hospital, with a board of twelve trustees, purchased the High Point Hospital in 1932, with aid from the Duke Endowment.

It was a survey of North Carolina hospitals made by Dr. Burrus in 1917 that led to organization of the North Carolina Hospital Association in Greensboro, September 3, 1918. Dr. Burrus entered military service in the World War, and was promoted rapidly in rank to colonel in command of the Base Hospital at Beauregard, La. The war over, he associated himself with the American Legion, and continued his interest in the North Carolina Hospital Association, serving on important committees, and as president in 1923. He also obtained other high professional honors; namely, president of the Medical Society of the State of North Carolina; president of the State Board of Health, etc. Always active in civic affairs, he was Guilford County's Senator in the General Assembly two terms, and early in his legislative career, became recognized as an outstanding leader in the General Assembly.

The Doctor's associates in the Burrus Clinic and Burrus Memorial Hospital trustees were his pall-bearers. His only child, Iris, wife of Dr. Hugh Black, of Spartanburg, died about three years ago. High Point's population, in every walk of life, black and white, stopped at the hospital and Burrus home to leave their word of sympathy for the widow of a man noted for his generosity and kind heart, as well as for professional skill and eminence in public affairs.

Burrus Memorial Hospital's Board of Trustees resolved:

"We desire to express our sorrow for the loss of his wise leadership, and the warm personal friendship he held for each member.

"Few men in his profession have ever made so marked an impression on the community life. Although warned to slow up, he deliberately chose to continue the full, rich, generous, beneficent life he had always lived, and had abated none of his manifold activities. He will be missed not only for his great professional qualities, but for his vivid and untiring interest in every good cause, and his devotion to his friends of whatever color, condition or race.

"He stood for high ideals of honor and integrity, and few men have been so truly loved and so completely trusted. He gave unsparingly of his time and strength and means to unnumbered causes. A noble example as a citizen, as a Christian, as a man. We shall ever hold his name in loving and honored remembrance, and endeavor to build faithfully upon the solid foundation he laid for the care of the sick and unfortunate."

Dr. Burrus was very pronounced in his convictions and uncompromising in the advocacy of same, but he had the respect and esteem of those who differed with him. He was fair and courteous, therefore never violated the rules of decent and decorous debate, and never struck a blow below the belt.

In the language of the immortal Shakespeare, Dr. Burrus was a fitting personality of the poet when he wrote:

"His life was gentle,
And the elements so mixed in him
That all nature might stand up and say,
'This was a MAN.'"

DOCTOR WILLIAM H. DREWRY

Dr. William H. Drewry, 36, of the Addison Apartments, Charlotte, who had practiced medicine in this city since last June, died in a local hospital of appendicitis with complications of peritonitis.

Dr. Drewry, esteemed by his colleagues here as a promising member of the medical profession, was graduated from Wake Forest College in 1924 and from the Medical College of Virginia, at Richmond, in 1926. He served his interneship at Rex Hospital, Raleigh.

He first practiced medicine in Grimesland and later for a short time in Cooleemee. Dr. Drewry also was engaged for some time in relief work at the Badin Hospital. Besides being a member of the State and local medical associations, he was a Mason and a member of the Improved Order of Red Men.

DR. LESLIE BALLARD EVANS

Dr. Leslie Ballard Evans, prominent Windsor physician, connected with the firm of Drs. Evans, Lyon and Castello, died in the Tayloe Hospital at Washington, N. C.

Dr. Evans was 68 years of age and had been ill for several months. He was born in Cumberland County, the son of Major Jonathan Evans and Douglass Wright Evans. He graduated from the University of North Carolina and the Virginia Medical College. For a number of years he practiced medicine in Clarkton, Bladen County, where he was associated with Dr. J. V. Clark.

For two terms he represented Bladen County as State Senator. Twenty years ago Dr. Evans moved to Washington to practice his profession. For a short while he was associated with Dr. C. J. Sawyer. Later he became associated with Dr. Lyon and afterwards Dr. Castello joined the firm.

Dr. Evans for several years was a member of the State Hospital Board and also served on the North Carolina State Board of Health. He was one of the directors of the Bank of Windsor and one of the largest land-owners in Bertie County.

Surviving are his wife, Elizabeth Mosley Evans; three children, Leslie, David and Eleanor Evans.

DR. DAVID ALLEN GARRISON

Dr. David Allen Garrison, 71, head of Garrison General Hospital in Gastonia, fellow of the American College of Surgeons and member of many medical and health organizations, died at his home in Gastonia.

Dr. Garrison was a native of Mecklenburg County and had resided in Gastonia for thirty years.

Surviving are his widow, a daughter, wife of D. B. Coltrane, prominent Concord banker, two brothers, Rev. J. M. Garrison of Kings Mountain, and Hal N. Garrison of Gastonia, and two sisters, Mrs. Sarah Overcash and Mrs. W. C. Garrison of Charlotte.

DR. MARCUS CYRUS HUNTER

Dr. Marcus Cyrus Hunter, 78, in point of service Mecklenburg's second oldest physician, died at his home at Huntersville and funeral services were held at the Huntersville Presbyterian Church, with Rev. John W. Grier, his pastor, in charge.

Dr. Hunter was born about a mile west of Huntersville on November 1, 1857, and was the son of Robert B. Hunter and Rebecca Jones Hunter. He was one of six children. In 1882 he graduated from the College of Physicians and Surgeons at Baltimore after having studied at Erskine College, Due West, S. C. Later he studied at the University of Maryland medical school. He was licensed May 4, 1882. He was the last survivor of his class.

Dr. Hunter practiced at Huntersville and for a short time at Stanley. Upon his return to Huntersville he resumed practice here and had continued active until a few years ago, when his health began to fail. Four years ago the Mecklenburg County Medical Society presented him a watch in commemoration of the fiftieth anniversary of his beginning the practice of medicine.

Surviving is the widow, before her marriage Miss Ida L. Wilson, whom he married May 20, 1884; a son, Olin Wilson, and a grandson, Olin Reid Hunter. A second son, Reid L. Hunter, died in 1923. Only his cousin, Dr. Leslie Hunter of Sardis, who received his medical degree in 1875, has had a longer practice than Doctor Hunter.

DR. MARK HUNTER

Dr. Mark Hunter's death at Huntersville closes the work of an active and useful life that saw within the one half-century period of its professional service a tremendous advance in the development of medical science.

Dr. Hunter, member of one of Mecklenburg's most populous and prominent clans, was licensed to practice medicine on May 4, 1882, and four years ago his fellow Mecklenburg physicians commemorated the completion of his fiftieth year of service. Few physicians are permitted such a long period of usefulness.

His death marks the passing of another of those faithful and beloved servants of humanity, the country doctor, whose sympathy, advice and encouragement often had more healing powers than the medicines they prescribed.

—*Charlotte Observer*

DR. DeWITT KLUTTZ

Doctor DeWitt Kluttz died September 7 at his summer camp nine miles from Washington, N. C.

Dr. Kluttz was born March 4, 1889 in Chester, S. C., the son of the late Alex W. Kluttz of Salisbury and Alice Jane Walkup of Monroe, S. C. He was a grandson of Col. Samuel H. Walkup, who distinguished himself in the Civil War, and nephew of the late Congressman Theo F. Kluttz of Salisbury.

After attending Oak Ridge Institute and graduating in 1907, Dr.

Kluttz received his bachelor of science degree at Davidson College in 1911. Captain of the 1910 Davidson football team and a three-letter man, he was regarded as one of the South's leading athletes in his day.

Dr. Kluttz received his M.D. from Pennsylvania after two years' study at the University of North Carolina.

He moved to Washington and became associated with Tayloe Hospital the latter part of 1920 and remained here until 1925. He then went to Greenville, S. C., to be associated with Dr. Hugh Smith. There he did x-ray and general diagnostic work for four years. He moved back to Washington in 1929 and has been associated with the Tayloe Hospital since. He specialized in x-ray and was a general diagnostician, being regarded as one of the ablest men in the State in this work.

He was married to Miss Annie Stevens of York, S. C., in February, 1930. She survives.

Dr. Kluttz took post-graduate work at Bostin in 1935, devoting his time to x-ray. He was highly regarded by members of his profession and was honored with many important positions. He was a member of the American Medical Association, vice-president of the Seaboard Medical Society, counsellor of the Tri-State Medical Scoiety, and was on the State Advisory Committee of the North Carolina Medical Society. He was also a member of the Southern Medical Society. He was a member of the Presbyterian Church.

OBITUARY OF DR. EVERETT F. LONG

By Dr. W. C. Ashworth

Dr. Everett F. Long, of High Point, North Carolina, died suddenly July 5, 1936, of a heart attack. His death came as a severe shock to a wide circle of friends and patients.

Dr. Long was born in Forsyth County, North Carolina, May 5, 1878, a son of John M. and Elizabeth (Doub) Long, both of whom are natives of Forsyth County. Although they are over eighty years of age, they survive, and reside on their homestead, where during his active years the father was extensively engaged in farming, and he also for some years was engaged in merchandising. Four children were born to them: Flora, who married Josiah Snotherly, a farmer of Stanly County, North Carolina; Arthur, who is on the homestead; Dr. Everett F. Long; and one who is deceased. The parents are devout members of the Methodist Episcopal Church, South, and have always been active in church work. Dr. Long's grandfather, Thomas Long, was also a native of Forsyth County. The Long family was established in North Carolina in 1704, by four brothers, who came from Germany to the American colonies, and since that date, for more than two hundred years, there have been Longs in the Old North State, and they have been substantial husbandmen and business and

professional men, and always good citizens. The maternal grandfather was Elijah Doub, a nephew of Peter Doub, the noted Methodist clergyman, who came from Germany to the American colonies in the early part of the eighteenth century and also settled in North Carolina.

Dr. Long attended the public schools of his native county, and took his professional training in the Medical College of Virginia, Richmond, from which he was graduated in 1909, with the degree of Doctor of Medicine, and immediately thereafter established himself in general practice in Davidson County, where he continued his practice until 1916. In the latter year he was made county health officer, and during the four years he acted in that capacity, he made so admirable a record as to attract considerable attention from the State, and in 1920 he was made county health officer of Wake County. After sixteen months in that office he was made a deputy state health officer, holding that position from November 15, 1921, until December, 1925, when he was made State epidemiologist. Dr. Long was very ambitious to be in the forefront of the medical profession, and as a consequence he did considerable post-graduate work in the New York Clinic Hospital in the year 1926. He was a yearly visitor to clinics in Youngstown, Ohio. In fact, he was planning to return to Youngstown the following week after his death.

On August 8, 1911, Dr. Long married Esther Irby, of Virginia, a graduate nurse, who also attended the Danville, Virginia, Female College. No children were born to Dr. and Mrs. Long. He was a member of the Methodist Episcopal Church, South. He was also a Mason. The Wake County Medical Society, the North Carolina State Medical Society, the Southern Medical Association, and the American Public Health Association all held his membership. He devoted all his time to his official duties.

Dr. Long was very conscientious in his work, and will be greatly missed by a large and appreciative clientele. He was always, both as physician and surgeon, and as public official, a true, stalwart and brilliant champion, and protector of the rights of the great masses of mankind. He was unusually anxious to make progress in his profession. His great passion was to make it possible for everyone in his beloved State to have an opportunity. He, like the immortal Aycock, desired that every child born in North Carolina should have the opportunity to work out his own destiny. He was pronounced in his convictions and uncompromising in their advocacy, but he maintained the respect and esteem of those who differed with him. He was fair and courteous; never violated the rules and regulations of our profession; never struck a blow below the belt. He is not dead, but his spirit and influence lives and fights on. "After life's fitful fever is over, he sleeps well."

DR. WAYMON C. MELVIN

Dr. Waymon C. Melvin, 62, prominent Linden physician and philanthropist, died in Good Hope Hospital at Erwin. He had been ill with pneumonia for several days.

Dr. Melvin, Linden's only physician, was born in Bladen County in 1875. He was graduated at the Ingold High School and attended old Trinity College, Wake Forest College, and the Medical College of Virginia. He began his medical career in 1900.

At the time of his death he was a member of the Tri-State Medical Society, the North Carolina Medical Society, and the Harnett County Medical Society. He was prominent in the civic, social and religious life of Linden. He served on the school board for several years and was a member of the Linden Methodist Church. He was widely known for his charitable work. He was a frequent contributor to worthy causes and led in various charitable movements.

He married Miss Ada Jones of Harnett County in 1902 and surviving are his wife, six daughters, and two sons.

Harnett County Medical Society attended the funeral in a body.

DR. W. OLIN NISBET

Dr. W. Olin Nisbet, prominent physician of Charlotte for 30 years, died at the home of his son, W. Olin Nisbet, Jr.

Dr. Nisbet gave up active practice several years ago, and made his home in Florida, Black Mountain, and Charlotte. He was born October 5, 1866, near Lancaster, S. C., son of Dr. John Newton Nisbet, who practiced medicine in that vicinity for 50 years.

He was graduated by the University of South Carolina in 1885, and received a medical degree from the Medical College of South Carolina in Charleston in 1889. He later studied in Berlin, Germany, specializing in gastro-intestinal diseases.

He was one of the organizers and staff members of the Charlotte sanatorium, also was a staff member of the Presbyterian Hospital, and was dean of the North Carolina Medical College in Charlotte from 1912 until 1916. He was a director of the Professional Realty Company, owners of the Professional building in Charlotte, was a member of the County, North Carolina State, District, Tri-State, Southern and American Medical Associations, and was a fellow of the American College of Physicians. He was also a member of the Gorgas Memorial Institute of Tropical Medicine.

He was a director in the Charlotte National Bank, an elder in the Second Presbyterian Church for 20 years, and a member of the Charlotte Country Club.

Dr. Nisbet married Miss Eugenia Heath of Waxhaw, who survives with three sons, Dr. Heath Nisbet, E. P. Nisbet and W. Olin Nisbet, Jr.

DR. ROBERT W. PETRIE

Dr. Robert W. Petrie, 60, prominent physician and owner of the Petrie Hospital in Murphy, died suddenly of a heart attack in his hospital.

Dr. Petrie, an eye, ear, nose and throat specialist, had gone into the

operating room to examine a patient who had been admitted to the hospital a few minutes before. As he entered the operating room he suffered the heart attack. Dr. L. U. Lumpkin, chief physician of the hospital, who was attending the patient, took Dr. Petrie to a room across the hall where he died within a few moments. Twenty minutes later the patient died on the operating table.

Dr. Petrie, originally from Lumberton, came to Murphy three years ago from Lenoir where he operated a hospital in partnership with Dr. Crowell. He opened the Petrie Hospital in February, 1934, and became widely known and respected in this section. He was first vice-president of the Murphy Lions Club and a member of the Lutheran Church of Andrews. Four weeks ago the Petrie Hospital was accredited by the American College of Surgeons and last year the hospital was placed on the Duke Endowment fund list.

Dr. Petrie leaves his widow, one son, William Petrie of Murphy, and two daughters, Miss Mary Wilkie Petrie of Murphy and Mrs. Helen Hollifield of Lumberton.

OBITUARY OF DR. WM. J. RICHARDSON

By Dr. W. C. Ashworth

From time immemorial, pioneers in every walk of life have always been appreciated. Astronomy has had its Galileo. Medicine has had its Hippocrates, Galen, Jenner, and many others of renown. Poetry and literature has had its Whittier, Longfellow, Holmes, and Shakespeare. The law of gravity has had its Newton. Ornithology has had its Audubon and Burroughs. History and science has had its Agassiz. Geology has had its Miller. Botany has had its Burbank and Gray. Electricity has had its Edison.

The Medical Profession of Guilford County has been adorned with many outstanding physicians, and among this number it is not the intention of the Guilford County Medical Society, I am sure, to overlook a pioneer in our profession, Dr. William J. Richardson, who, on account of his sterling qualities and knowledge of medicine, won an enviable reputation in the Guilford County Medical Profession.

He was formerly a president of the Guilford County Medical Society, his activities were pronounced, and he was a universal favorite with his colleagues in the profession. Dr. Richardson never seemed to care so much for an extensive practice, but rather preferred select families, such as the Irelands, Leaks, and Riddenhours, in order that he might give them his personal attention, rather than have a multiplicity of families who would necessarily prevent his giving his talent to the patients who trusted him absolutely in time of stress and need.

I do not think that any higher tribute can be expressed than my statement that he was in reality a pioneer in medicine, and it is a deep regret that the ultimate outcome of his professional career, during the last few

years of his life, was greatly handicapped on account of illness, but is still in our memory a monument to our profession.

He was a real student of medicine, and his research work was most outstanding. Aside from his knowledge of medicine, he was an omnivorous reader, and his knowledge of literature was unusual for a physician, since most of us confine our reading largely to medicine rather than extraneous reading.

Dr. Richardson, 73, died Wednesday afternoon, February 17th, at 5 o'clock at Wesley Long Hospital, where he had been confined for several weeks.

Dr. Richardson, who lived at 342 McAdoo Avenue, was a native of Halifax County, Virginia, being a son of the late James N. and Betty Stanfield Richardson. When nine years of age he moved with his family to Texas, where he obtained his elementary education, later attending Jefferson Medical College in Philadelphia. He moved to Greensboro fifty years ago, and entered the practice of his profession here.

In 1908 he married Miss Annie Lewis Faulkner, of Halifax County, Virginia, who died November 20th, last year. About fifteen years ago Dr. and Mrs. Richardson moved to Florida where they remained approximately ten years, residing in St. Petersburg and Melbourne. They returned to Greensboro in 1932. The only near relative surviving is a sister, Mrs. Samuel L. Trogdon, of Charlotte, North Carolina.

The funeral of Dr. Richardson was conducted Friday morning, February 19th, at 11 o'clock at Hanes Funeral Home by Rev. W. A. Stanbury, D.D., pastor of West Market Street Methodist Church, of which he was a member. Burial was made in Green Hill Cemetery.

Crossing The Bar

Sunset and evening star,
And one clear call for me;
And may there be no mourning of the bar
When I put out to sea.

For such a tide as moving seems asleep,
Too full for sound or foam,
When that which drew from out the boundless deep
Turns again home.

Twilight and evening bell,
And after that the dark,
And may there be no sadness of farewell
When I embark.

For though from out our Bourne of time and place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crossed the bar! —*Tennyson*

DOCTOR JAMES EDWIN SMITHWICK

On the twenty-fourth day of the month of August another vacancy was made in the ranks of faithful supporters of organized medicine in this State and section, and of practitioners of family medicine of the highest type.

That day marked the death of James Smithwick, family doctor for forty-years-lacking-one to the village of Jamesville and the east end of the County of Martin.

In the past few years Dr. Smithwick lost two of his devoted friends in the profession—Dr. Cyrus Thompson of Jacksonville, and Dr. William E. Warren of Williamston. At each meeting of the Tri-State Medical Association all three would be seen much together, and each contributed largely to the success of these meetings.

Doctor Smithwick made frequent visits to clinics and educational medical meetings, and these visits were devoted to improving and increasing his ability to serve his people.

To his family, to his patients, to his fellow doctors, to his friends generally and to his community he was devoted, faithful and a tower of strength.

In the churchyard of old Saint Paul's in Edenton sleeps a progenitor and cut in the marble over him may be read the family coat-of-arms and the proud name, Smythwyck. With the passing of the years the spelling of his patronymic underwent a slight change; but Doctor Smithwick's life portrays all that is suggested on this stone under the walls of the church in which worshipped the gentlefolks of this early capital and metropolis of the Colony of North Carolina.

From Southern Medicine & Surgery.

DOCTOR JAMES ERNEST STOKES

Memorial Tribute to Dr. James Ernest Stokes, read before the Rowan County Medical Society, March 4, 1937, and adopted by the Society as expressing the unanimous sentiment of its Members.

"Dr. James Ernest Stokes was a native of Baltimore, Md. He was the son of the Rev. George A. and Emma Brown Stokes. He prepared himself for the Medical Profession through studies at the University of Maryland and obtained his B.A. degree from John Hopkins University. He was studious and endowed with a brilliant intellect. Upon his return to this country he became associated with Dr. Howard A. Kelley, where he continued for six years and where he built a reputation that resulted in his being called to Salisbury, N. C., in 1899 to be associated with the late Dr. Jno. Whitehead, in organizing and operating the Whitehead-Stokes Sanatorium. Under the care and management of these skillful physicians this institution grew until it became a hospital of size sufficient to accommodate

sixty or more patients. It rapidly built up a splendid reputation in this section, due to the ability of these two able men. He was also largely instrumental in the inception and realization of the Rowan Memorial Hospital. He married Miss Rebekah Marsh of Salisbury, N. C. They have one daughter, Rebekah. Dr. Stokes was devoted to his church. He served as vestryman many years and was senior warden several terms, retiring only on account of ill health.

"Fortunate is the man who can select wisely his life work and more fortunate still is he who strictly adheres to it. Dr. Stokes surely had divine guidance, he evidenced by his fitness in his chosen profession, when he elected to be a surgeon. His aptitude and skill added to the devotion and self sacrifice which he put into his work made a master surgeon worthy of the highest admiration and esteem of his confreres and of the lasting gratitude of his patients. As he was taught and trained so he forever continued. These ideas of perfection soon became mingled with a part of his fixed and life long ideals.

"Having seen his coveted star never once did he compromise with any standard of lesser magnitude. He was meticulously careful in every detail, anything worthy of being done, called forth his best endeavor. His coworkers realized that it was expected of them to do, not more, but always the best they were capable of doing. Dr. Stokes did not know how to be party of feeble effort nor slipshod methods; thus he was loyal throughout life to the ideals of his youth. He kept the faith and it would be truly said he fought a good fight. His name was a symbol of thoroughness.

"He was a constant inspiration and example throughout the years to the younger men, silently urging them to slight nothing and to do always their best in everything. His skill was recognized far and near. In his earlier days before hospitals were plentiful he operated within a radius of many miles, including many of the larger and more important towns of the state. Had he been ambitious or cared for the plaudits of the crowd, he could have doubtless climbed to dizzy heights in the medical world. His ambition was perfection in his work and success with his patients. But the choice of simpler life, love and devotion to his patients, ministering to their needs, called him far stronger than the applause of the galleries. He dedicated the strength and stamina of his youth to his work, giving his all —and willingly. Often while others slept he kept silent vigil by the bedside, observing, watching and giving his best that the patient might have every assistance in the fight for life.

"This wonderful obsession became such a part of him, emanated so abundantly from him, as to make us brother doctors feel it and know it. We sought after it. When he was in consultation we felt relieved, we knew that we had offered our patient the best. He was our sheet-anchor in distress, he could be depended upon to give help and put oil on the troubled waters. His reassuring manner in the room of pain and suffering was most quieting and comforting. The patients seemed to sense it and an expression

of confidence and hope would soon replace that of weariness and despair. His was an understanding heart, tempered with mercy, yet controlled with quiet, simple dignity. Being a cultured man and living a life of culture, enabled him to elicit the truth, to think clearly, and be guided by his irreproachable surgical conscience in making his vital decisions. The loss of such men to their profession is tragedy, the reaction should be an inspiration to those who would emulate such virtues.

"As a devoted husband, loving father and good citizen, he left nothing to be desired. For those entrusted to his care it was his ever present desire to make life fuller and happier and doing this was his greatest pleasure and reward. Being unusually handsome in appearance, and gifted with a pleasant, soothing, well modulated voice he was particularly suited for giving the sympathy and encouragement so necessary in dealing with the sick and afflicted. His many attainments we will leave to his biographers where they can be more properly and particularly dealt with.

"He has forever left his busy, useful life of service among the sick and suffering to enter the portals of the Palace of Peace. When he shed his earthy mantle it was to wear the royal robes of heaven—and he will wear them well. He approached death with the same unfaltering spirit that directed his life; unflinchingly, yet with gentleness, and bravely as became the worthy warrior that he was, in bowed reverence, resigning gracefully to the hands of destiny, surrendering his all here—and forever. Thus we commend him to you, whose life work remains as a monument to the profession, whose name shines in glory and whose epitaph reads with the cadence of a happy benediction."

Committee:
H. L. Monk,
C. W. Woodson,
B. W. McKenzie.

DR. CHARLES SIDNEY TATE, RAMSEUR, N. C.

No man is a hero to his valet. Few men are heroic to their own children. Here was a man who even his family considered to be an unusual person. In the few lines permitted, only a very brief reference can be made to the many fine things that without flattery might be said of this person who was recently known as Dr. C. S. Tate.

He was born near Burgaw, December 17, 1863. Son of Thomas Hogan Tate and Mary Colvin, and one of a family of five. His Grandfather, Rev. Robert Tate, was a pioneer Presbyterian Minister. He received his general education at the local schools, and the University of North Carolina. He then taught School for a number of years. His medical education was received at the University of North Carolina and the former Baltimore Medical College, graduating in 1893. He then entered active practice at Ramseur, N. C. Here he died May 25, 1936. His wife was Mary Ida

Campbell, one of his one-time pupils. She pre-deceased him seven years ago. Of his five children, three are living, mourning him as the greatest character in their life.

Here was a Scotchman who might have been the original of that famous Scotch Character of fiction, Dr. William McClure, found in Ian MacLaren's much read book, "Beside the Bonnie Briar Bush." For over forty years, on foot, in saddle, and by other more modern means, he went under all conditions of time, weather and personal health, like that other physician, to minister to the distraught in body, or sore in spirit and wherever he went his remarkable optimism and cheerfulness, brought healing and peace.

Many lines might be written in eulogy, but this would only be a much extended repetition of truth that can be effectively stated in few words. He was not only a great and active physician but of great versatility in other lines, and unstinted of his time and labor in the many fields of our complex modern life. In the Methodist Episcopal Church, he was a devoted worker and for many years was leader of a men's Bible Class. He was a member of the School Board, Coroner for the County of Randolph, member of the Board of Health, a constant attendant of and participant in the affairs of Randolph County Medical Society, of which he was President at the time of his death. He also belonged to the State and National Medical Associations. Added to all this he was able to aid the benevolences of several fraternal societies of which he was a member.

He was ill for several months prior to his death, owing to having fallen a victim of carcinoma of the liver. Though exceedingly ill he bore his miseries with great restraint and thoughtfulness for the distress of his adoring children. He was a great lover of flowers, and a successful grower. Many of these found their way into the homes of his friends. It was fitting that at his funeral in his church, crowded by throngs of both white and colored, that there should have been wreaths in profusion. The doctors of Randolph County Medical Society and the Staff of the Randolph County Hospital were the honorary pall-bearers, and after his children, the chief mourners.

Dr. John Q. Myers (Charlotte): Mr. President, I would like to say something in behalf of the three young men who left us at Charlotte during the past year.

There were not three men in our Society who were more honored than Dr. Patterson, Dr. McGregor and Dr. Drewry, who hadn't been with us very long but had made an enviable reputation for himself.

We all mourn their loss, our loss—their families' loss and the community's loss—these three brave young men who were so nobly defending the cause of organized medicine, and rendering a great service to humanity in our community.

Dr. Abel: We still have a few minutes, friends, for short tributes to friends who have passed on during the year.

If there are no others, let us stand and bow our heads.

. . . The members arose and stood with bowed heads in silent tribute to those who had passed on. . .

President Strosnider: Friends, we have now arrived at that point in our program which we have all looked forward to, and anticipated with a great deal of pleasure. We will now have the pleasure of hearing the guest speaker.

I shall now call upon Dr. Cooke, President of Forsyth County Medical Society, to present the guest speaker today.

Dr. Cooke: Mr. President, ladies and gentlemen of the North Carolina Medical Society: The man whom I have been asked to introduce needs no introduction in North Carolina, in fact, in no state, and I am not worthy to loosen his shoes, but I found out something about him this morning. I found out that he also taught our State President, even before my day. I also found out that we both have something in common.

My friends in Winston-Salem think that I would be a good artist. The Garden Club in Baltimore thinks that Dr. Shipley is a good gardener. But we of the medical profession know that he is a great doctor.

I am happy now to present Dr. Arthur M. Shipley, Professor of Surgery of the University of Maryland.

Dr. Shipley! (Applause)

Dr. Arthur M. Shipley: I am always glad to come to North Carolina. In the old days I used to come to most of the State Society meetings before most of you were born.

The last time I was in Winston-Salem it was to attend a State Society meeting. I am not going to tell you how long ago that was, but it was sufficiently long ago for the city to have been almost entirely rebuilt since those days. I scarcely knew my way around when I came here this morning.

I had breakfast this morning with a group of the officials of the Society, and their talk turned to fishing. At the end of our breakfast our gracious hostess presented us with a rose. She did not say so, but I am sure she was thinking that she was initiating us into the order of Isaac Walton. I am quite sure that what she was really doing was that she was pinning on us an emblem of the Society of Ananias. (Laughter)

I shall talk to you this morning briefly and without statistics about the surgery of the biliary duct apparatus.

"THE BILIARY DUCT APPARATUS AS A SURGICAL PROBLEM."

Arthur M. Shipley, M.D., Professor of Surgery,
University of Maryland, Baltimore, Maryland.

The gall-bladder has more functions than any other tissue in the body except the voluntary muscles, and because the normal body is never profligate of space, the gall-bladder must have, and does have, a tremendous influence in the functions and metabolism of the body.

The blood supply of the liver, you know, goes into it from two sources, the hepatic artery and the systemic circulation, and the portal vein.

The portal vein carries to the liver a large accumulation of substances. Many different substances are carried into the liver.

These two blood streams are merged somewhere before they reach the ordinary liver cell. Just where they merge isn't definitely understood either by the anatomist or the physiologist.

On the other side of the cell are the radicles of the biliary system and through these polygonal cells of the liver and the stellate or the Kupffer cells, these two types of cells, is sieved out the blood, and certain very important changes are made out of the blood.

If you hark back to your physiology, you can count up about fifteen functions of the liver. These functions are all different. That is one of the confusing things in estimating the function of the liver as an aid in the diagnosis of disturbances in liver function or diseases of the biliary duct apparatus.

Let us run over some of them for just a moment. One of the chief functions of the liver is to excrete or secrete—because it is both an excretion and a secretion—bile. The chief elements of the bile are brought up to the liver. Cholesterin and bilirubin are brought up to the liver by the blood stream. There they are acted upon by the polygonal cells of the liver, and bile is formed. The three chief constituents of bile, as you know, are the coloring matter of the blood, the bile salts and cholesterin.

Very little is known of cholesterin. The bile salts, of course, are pretty well understood. Bilirubin, as you know, is a coloring matter of red blood cells. These blood-cells are disintegrated in the reticulo-endothelial cells, which are found in the spleen, bone marrow, and lymph nodes, and in the Kupffer cells of the liver.

Bile, after it is acted upon in the liver, and excreted, cast out, into the biliary duct apparatus, doesn't return to the liver. It used to be thought that some elements of the bile was reabsorbed and carried back to the liver, and acted as an activating principal in stimulating liver function. That is pretty well discredited.

So that many changes take place in the bile from the moment it is excreted by the polygonal cells to the liver. These changes are chiefly oxidation changes until it is finally thoroughly oxidized in the intestinal tract. The bile salts are a very important constituent because the bile salts have two functions. They help to emulsify the fats, and they also lessen the surface tension of the mucous membrane lining of both the intrahepatic and the extrahepatic portions of the duct system, so that the bile flows more easily, the viscid bile flows more easily along this mucous membrane lining tract.

Take the carbohydrate function—I shall only mention these. That function is, of course, an important function of the liver. Sugar is brought

to the liver as a glucose. It is laid up as glycogen in the muscles. If you extirpate the liver from a dog, in a very short time there is no sugar, no glucose in the dog's blood, and the dog suffers from hypoglycemia. He will go into a hypoglycemic state and die. If glucose is injected into the blood-stream of the dog he will revive. This can be carried on for a number of weeks, and the dog can be kept alive.

The glycogen in the muscles cannot be used unless the liver acts upon it. So the liver is essential to keep up the carbohydrate function of the body. That, of course, is the great source of its heat and energy.

Let us take the proteid metabolism. For instance, when lean meats or other proteids are eaten, they are changed by different stages in the intestinal tract until they come up in the liver and the portal circulation as amino-acids. These amino-acids are broken down in the liver and nitrogen is liberated, and carbohydrates are formed. So that carbohydrates are formed in the liver out of nitrogenous products. The nitrogen is converted chiefly into ammonia. In the liver the ammonia is converted into urea, so that the kidney function is largely lost unless the liver is present. If the liver be removed from a dog, in a very short time there will be no urea in the blood at all, and the kidney ceases to eliminate any of the protein metabolic end products.

Fat is laid up in the liver in large quantities during fasting stages. Up until the time that the fat is called upon, the glycogen is largely replaced by fat globules in the cells of the liver.

The liver has an important function in eliminating certain products. It will eliminate dyes that are injected into the bloodsteam, any sort of particulate material, most of which is picked up. These foreign materials, or particulate materials are picked up, for instance, by the Kupffer cells, and it is on this that the ordinary dye tests of the liver function are based, on the rapidity and ability of the liver to pick out this particulate material from the blood and eliminate it.

Not only that, but the liver is the chief agent by which micro-organisms are eliminated from the blood-stream. Here is one of the most confusing things in studying the function of the liver, in estimating any decrease in symptomology of the liver, and especially in estimating infection in the biliary duct apparatus. It used to be taught that if live micro-organisms were found in the bile that was evidence of a diseased biliary duct apparatus. There is great question as to that, because myriads of micro-organisms are brought up to the bloodstream in the portal circulation, and a great deal of it gets into the bile, as an eliminative product. It passes in the bile into the gastro-intestinal tract and the duodenum, and is there eliminated.

So that the finding of live organisms in the biliary duct apparatus is by no means proof that that biliary duct apparatus is diseased. This has put a considerable crimp on Cole's work, who, you will remember, by fractional removal of different types of bile, by means of the duodenal

tube, thought that he was able to indicate accurately just what degree of infection might be present in the biliary duct apparatus.

Not only that, but the liver eliminates most of the soluble toxins of the body. Beyond that, the liver is the great organ by which the active principles of many drugs are broken down, strychnine and many others. For instance, the liver, you know, is seriously damaged from phosphorous poison and chloroform. There are many drugs that have a deleterious effect upon the liver cells, because it is the liver cells' job to eliminate these drugs from the bloodstream and get rid of them in the bile.

So that the liver function is a very intricate matter. Not only that, but the liver has to do with maintaining the fibrinogen level in the blood. I could go on and on about the liver, but I don't want to bore you with all of these things. I just want to impress upon you that there are so many functions of the liver, in addition to the excretion and secretion of bile, that the ordinary liver tests, about which so much is spoken, are at best at the present time in an unsatisfactory state; many of them are not very helpful in estimating the actual function of the liver. Many of them are not helpful in arriving at an accurate diagnosis as to pathologies in the liver or in the biliary duct apparatus. After all, we have to go back again, very largely, to clinical evidences of diseases in arriving at a diagnosis.

Of course there are some exceptions to this. The function of the gall-bladder has been pretty well worked out and is very helpful in estimating gall-bladder disease. Cholecystography, of course, as you know, is a very important and very valuable aid. The trouble with cholecystography isn't any defect in the behavior of the gall-bladder, but it requires an expert x-ray man to interpret the readings of such a gall-bladder. The fault isn't in the gall-bladder but in the x-ray man.

So that, in order to correctly interpret these readings, the x-ray man should be broadminded. He should be versed in clinical medicine, and he should know a great deal about reading these plates.

For instance, I don't think the x-ray man who reads the cholecystogram has any right to say any more than two or three things. He has a right to say that the gall-bladder is functioning normally. He has a right to say that the gall-bladder isn't functioning at all. He has a right to say that the gall-bladder may be irregular in size, and therefore adherent as the result of pericholecystitis.

But when he begins to talk about defective functioning of the gall-bladder, and slow emptying of the gall-bladder, then he is treading on very dangerous grounds, because in various clinics where the reports of the x-ray man have been checked up against the findings at operation, they do not always jibe.

You remember perfectly well that the gall-bladder runs through a very definite cycle. The gall-bladder, in periods of rest from digestion, will fill up with bile, and during this period after it has become filled with bile, the gall-bladder has the remarkable function of putting out if the bile,

water, and adding to the bile, mucin, so that the bile in the gall-bladder will be concentrated to about one-tenth of the strength of the bile, or one-tenth of the volume of the bile, as it leaves the liver.

Therefore this concentrated bile is ready to be poured out into the duodenum during periods of digestion, especially in periods of digestion when carbohydrates and fats, especially fats, are ingested. So that in the ordinary test of cholecystography, when one gives a meal just after taking a photograph of the gall-bladder, when the bile has fully taken out of the circulation as much of the dye as it can, it can be visualized in the gall-bladder, whether normal or not. If one gives a meal of fat and egg, the gall-bladder should empty itself within about one or two hours, empty itself completely. A normally functioning gall-bladder will behave after that fashion.

So much for that briefly.

Now let us take up for a moment some of the factors that make gall-bladder surgery the unsatisfactory surgery that it is. After carcinoma, the morbidity in biliary duct surgery is higher than in any other type of major surgery. If you look over the statistics from any honestly reporting clinic, you will find that in only anywhere from 60 to 75 per cent of the patients operated on for gall-bladder or common duct disease or hepatic duct disease, will the patients be comfortable afterward, will the patient himself think he is well.

It doesn't make any difference what the hospital report says. The hospital report may be a very satisfactory one but if you talk to the patient two months afterward he may be a very unsatisfactory patient.

Why do we have these relatively bad results in biliary duct surgery? For a number of reasons.

First, because of mistaken diagnosis. If we base the diagnosis upon jaundice we are treading on very dangerous ground. In some 452 cases, I think—I have forgotten the exact number—between four and five hundred cases were reported by the late Dr. Judd from Mayo Clinic, and of these 70 per cent of the cases of jaundice were obstructive. That means that the difficulty was an obstruction in the extrahepatic biliary duct apparatus. Twenty-three per cent of the cases of jaundice were hepatic. That means that the liver cell itself was sick, and wasn't able to pick out of the blood the things that should go to make bile. Therefore, the coloring matter of the bile, the destroyed hemoglobin, accumulated in the bloodstream because it couldn't get through the liver.

Right here, of course, the Van den Bergh test is often very important But the Van den Bergh test has been losing ground rather rapidly, and hasn't developed into the tremendously helpful aid that one expected when it was first reported.

In a definitely obstructive jaundice one should have a positive direct Van den Bergh test, and that happens in 70 per cent of the cases.

In seven per cent of the cases—you see, 70 and 23 is 93—in seven per cent of the cases, the jaundice is a hemolytic case, and that means some intrinsic disease of the blood, in which the red blood cells of the liver are destroyed so rapidly that the normal bloodstreams are not able to pick out the poisonous matter from the blood and prevent them from being deposited in the tissues.

So that when one looks at a patient with jaundice one has to determine at once whether the jaundice is due to some blood disease, whether the jaundice is due to some liver disease, or whether the jaundice is due to some disease in the extra-hepatic biliary ducts.

In hemolytic jaundice and in hepatic jaundice surgery is not indicated. Surgery is only indicated in the 70 per cent group, where the jaundice is obstructive. So if one heads in unwisely, or without due consideration, or makes a mistaken diagnosis, a very considerable group of these patients who are not improved by operating on the biliary duct apparatus, will of course not be aided by such an operation.

Then I will take a minute to call your attention to the anatomical anomalies about the gall-bladder. At the present time, no surgeon feels that he has done his duty in dealing with a gall-bladder unless he takes it out, and I think that is a great pity. I think it is a pity that that idea has gotten abroad in the world.

An older man with a good deal of experience—who is accustomed to carrying the burden of mistakes, who can live up under it, who is accustomed to standing the criticism of his associates—may look at a gall-bladder and decide that it is unwise to take such a gall-bladder out. He may heed the wise talk of certain ghosts of mishaps that stand at his shoulder, and not take out that particular gall-bladder for various reasons which I will mention in a minute.

But the younger man may feel that it is incumbent upon him to take out the gall-bladder. He may attempt to take out a gall-bladder that were better left in until some later time.

For instance, you know perfectly well that there are two great anxieties in cholecystectomy. One has to do with the cystic artery, and the other with the cystic duct. These two structures are not constant. The cystic artery—I will bore you for a minute to show you how important it is—ordinarily comes off from the right hepatic branch of the hepatic. It passes either in front of or behind, ventral or dorsal to the right hepatic duct. In the small triangular space between the gall-bladder and the liver, lateral to the gall-bladder, it passes up into the walls of the gall-bladder. That is how it should behave.

But it may do almost anything. Within the last three months, I have operated on two patients in whom the hepatic artery itself looped over in front of the right hepatic duct, and lay up close to the cystic duct. If it hadn't been that it was larger than the cystic artery should have been, one would have as a matter of course slipped a ligature around it and tied it.

Well now, if you tie either the hepatic itself, the right or the left hepatic, that patient will die within a few days of necrosis of the liver, because all of the oxygen that goes to the liver, or all the arterial blood that should go to the liver will go to the hepatic. The portal vein doesn't carry any arterial blood to the liver. It carries blood to be worked on. The hepatic artery carries the nourishment to the liver and if one ties the right or left hepatic he will put out of commission that lobe of the liver.

As proof of that, some years ago, there was brought into the clinic at the University Hospital a child who had been run over by a truck, and whose body here, just below the costal margin, had the bruise of a truck wheel, in the days before truck wheels were solid tires. This boy was badly shocked and evidently was dying of concealed hemorrhage.

At operation his hepatic artery was shown to have been caught between the truck wheels. He was a thin little youngster, and it had severed it completely across where the truck wheel pinched it off against the body of the vertebra. There the two ends lay loose in the peritoneal cavity. I knew perfectly well when I put a ligature around it, to save his life from immediate hemorrhage, that he was going to die within a week, of liver necrosis, which happened to him.

I have wondered many times since whether I might have done something else and, as far as I am able to know, I couldn't have done anything else. But I have never forgotten that child. So one must not injure the hepatic artery.

When it comes to the cystic duct, it should go fairly directly from the gall-bladder straight into the hepatic duct, and at that point it becomes, of course, the common duct. But very often it will run down for a half inch or an inch parallel to the duct and join the hepatic duct low down, so that the common duct may be short or long, depending on how high or low, that is, how near to the duodenum the cystic duct joins the hepatic.

If the patient is fat and short, and if the liver is high, and if there is a good deal of acute cholecystitis, and if the fat is more or less thickened by infection, and there is a lot of exudate and edema, and if the gall-bladder is very adherent, and if the patient is a bad operative risk—and if there are a lot of other "ifs" that I might mention if I had time—it is very much wiser in such a case not to run the risk of injuring the hepatic artery; not to run the risk of injuring the common duct or the hepatic duct, by attempting to remove such a gall-bladder. The simpler thing to do is this—and I have had occasion to do it twice in the last month—just such a patient with a badly inflamed, thick and adherent gall-bladder, full of stones, heavily infected, where there was so much edema about the neck of the gall-bladder it was almost impossible to recognize the tissues, where it was hard to recognize the hepatic and the common ducts, where you didn't want to leave this big, heavily infected gall-bladder in place, where the patient had a moderate amount of jaundice, where the liver itself showed evidences of ascending cholangitis, where the liver was mottled and some-

what enlarged as the result of an ascending infection, where you were anxious not to take out this heavily infected gall-bladder, but anxious at the same time to drain the biliary duct apparatus.

In those instances, I have practiced this for a number of years, and I notice in this months' "Surgery" or in this new Journal, there is an article by Ritchie in Minneapolis, who has been doing the same thing; I resect the gall-bladder, or dissect the gall-bladder free from the liver as cautiously as possible, free from its adhesions around the gall-bladder, and then split the gall-bladder open so that I can look at what I am doing from the inside. Then I leave a stump of the gall-bladder large enough to insert a tube into, and suture the stump around the tube.

You have removed all of the gall-bladder except a little bit of Hartmann's pouch and the cystic duct. You haven't gone close enough down to the common duct to injure it, you haven't gotten close enough to the cystic artery to injure that. You have maintained drainage, got the drainage that you want, and you have removed most of the gall-bladder.

So one can do a very much safer operation in these cases of the type of gall-bladder infection about which I have spoken.

I will run over with you very rapidly, because I promised to keep within thirty minutes, a classification of gall-bladder diseases that is practicable and will work. I will call your attention briefly at the end of this classification to its confusion.

There are two types of acute cholecystitis. One type of cholecystitis is the type where infection predominates, where the gall-bladder is infected, where the patient has fever, where there is a tender mass, where the patient is uncomfortable, where there is eructation of gas and some vomiting, where the patient may be a little bit jaundiced with associated cholangitis, but where there isn't any very sharp or disturbing colic, and where the patient may not have needed a hypodermic of morphine, where at operation you find just the type of gall-bladder I have described.

That is the acute infectious cholecystitis, usually the pericholecystitis. You remember that the gall-bladder is crowded in a very ticklish place here from the standpoint of surgery. Just below it is the hepatic, just above it is the liver, on the right edge the great omentum, and of course the neck of the gall-bladder is right up against the right edge of the gastrohepatic omentum which contains the common duct, the hepatic artery and the portal vein. You don't have to worry about the vena cava because that is behind the gall-bladder, out of reach, unless one is unusually rough.

This is the commoner type of acute cholecystitis. The other type is quite distinct from this. In this type of acute cholecystitis there may or may not be stones. Usually there are. Whether the stone precedes the infection or follows it, whether the stone is the result of infection or the cause of it, is hard to say. And I will leave that question open. We haven't time to discuss that this morning.

But the other type of acute cholecystitis is definitely clearcut, too. These are patients who have sharp attacks of biliary colic, who, out of a clear sky, have a sudden terrible pain, a pain that is a transverse pain across their abdomens, a pain that catches their breath, a pain with which they can scarely live, that is after a while referred up under the shoulder blades, an altogether agonizing type of pain.

If you give them a hypodermic of morphine they will require three-eighths, more than that usually. When the pain is gone, when the contracture of the muscular gall-bladder has been quieted down and the stone, which has been caught down in the common or cystic duct, drops back into the body of the gall-bladder, the pain all goes away, and these patients are just as well the next day as they were the day before. They will have repeated attacks of such pain, and then after a while the stone may get larger. It may float up into the body of the gall-bladder.

It may never become engaged again, and such a patient may go on for years, or until his death without any further evidence of gall-bladder disease, without ever having had a heavily infected gall-bladder, without having had a pericholecystitis, without ever having had any fever. And yet these patients may have, of course, repeated attacks of biliary colic, and may reach such a point that such a person may elect to be operated on rather than face the prospect of repeated attacks of such agonizing pain.

The proper thing to do for such a gall-bladder is to take it out, if you can. If you can't take it out, don't take it out. If the patient is a bad risk, if he has taken a bad anesthetic, do a cholecystotomy. If he is a little bit better and you can take out most of the gall-bladder, do a resection gall-bladder. If you can take it out safely, take it out. The proper thing to do is to take it out, if you can.

But remember the cardinal rules of operative surgery are three: First, get a live patient, and that is what you should be thinking about all the time when you are operating—get a live patient.

Second, try to cure him of the conditions that bring him to you. Try to get rid of that particular symptom complex. Get rid of that particular pathology, that particular pathological lesion.

The third rule is: Don't give him some other disability. You can easily do that if you ligate his common duct, if you lose his cystic artery, and he bleeds to death, if you get a hole in his duodenum and he gets a duodenal fistula, if you get a hole in his colon and he gets a peritonitis. There are so many things that you can do in attempting to do the impossible, that one should recognize the anatomy and his limitations, and do the safe thing, because one can always operate on such a patient again. So those are the three rules of operative surgery.

Now we come to chronic cholecystitis. There are three types, and here great confusion and great difference of opinion exist. In the first group is chronic infectious cholecystitis, with or without stones. The gall-bladder

is thickened or adherent and there isn't any question when you look at it that it is an infected gall-bladder; the gall-bladder is adherent; there are stones in the gall-bladder or not. The pathology is evident. Your judgment isn't disturbed by many things, and the problem there is purely a mechanical one: Can you get the gall-bladder out safely, or can't you? Take it out if you can.

In the next group falls another group of chronic gall-bladders, that are still definite, and these are the so-called strawberry gall-bladders in which infection takes no part. Here is a metabolic disease. Here is a disease in which micro-organisms play no part, but the gall-bladder is still a pathological gall-bladder. It is pathological to the eye, it is pathological to the pathologist who examines it.

It is a thickened gall-bladder. It is probably not adherent. It is a gall-bladder in which there is a piling up of cholesterin crystals in each little papilla. When you open it up it looks red. That is the gall-bladder that should be removed. It is easy to remove. In many instances there won't be stones, and that gall-bladder should be removed. Cholecystectomy is the proper treatment for that.

Now we come to a third group. This third group is the confusing group. It is about this third group that the surgeons in various clinics differ. One clinic will report a whole series of hundreds of cholecystectomies. Another clinic will report a relatively smaller group, and the difference in these two clinics falls in this group.

Here is a patient who has the symptoms of gall-bladder disease, without jaundice, or just a little bit of jaundice, due to an ascending change in the liver, not due to infection, a type of hepatitis, inflammatory, but not infectious. To the naked eye this gall-bladder looks perfectly normal.

When removed, the pathologist can report nothing wrong with this gall-bladder. The bacteriologist can find no abnormal organisms. This is the gall-bladder that is removed, and removed wisely and properly, provided you haven't overlooked a chronic appendix, provided your patient hasn't got a chronic pancreatitis, provided the patient hasn't an overlooked ulcer of the duodenum or stomach, or beginning coronary occlusion, provided you have eliminated all of the confusing differential diagnostic points that confuse you in dealing with the upper abdomen.

Remember that under the palm of your hand in the upper right quadrant is the little end of the stomach, the head of the pancreas, the right edge of the great omentum, the hepatoduodenal ligament, a portion of the liver, the whole biliary duct apparatus, the hepatic flexure of the colon, the suprarenal body, the upper pole of the liver, the hepatoportal lymph nodes, and the lymphatic vessels and the blood vessels that supply these structures.

So that you can see when you open such a patient, where the diagnosis is disease of the gall-bladder, and where there isn't any evidence of

pathology to your eye, that you only remove such a gall-bladder in the face of definite symptoms of biliary duct disease, provided you are sure you haven't overlooked a stone in the common duct or in the hepatic ducts, or any of these things I have mentioned. (Applause)

President Strosnider: My friends, you can readily appreciate why those of us who were so fortunate as to have Professor Shipley as our teacher of surgery, are so proud and so glad to have had him here and to sit at his feet. He was a teacher as he has already demonstrated here this morning. He spoke and taught just as fluently and just as effectively twenty-nine years ago as he did this morning. And I want to say to Dr. Shipley if you have changed any since those days you have improved. (Laughter)

The only conclusion I can come to is that he has maintained such an active mind, and has such a wonderful vocabulary on these and other subjects as well—he knows them just as thoroughly as he does the subject which has been assigned to him this morning—due to that one club to which he has referred this morning, the Isaac Walton League. I would suggest that those of you who are losing your hair—something like myself—should take it up. Dr. Shipley is a good illustration of what will happen to the Isaac Walton followers.

Dr. Shipley, on behalf of the Medical Society of the State of North Carolina, I want to thank you for your able and outstanding address on this subject, which is of such great importance to the general practitioner, to the surgeon, and to every man who is practicing in the various branches of medicine.

President Strosnider: Dr. Yoder has an announcement to make at this time.

. . . Various announcements were made at this point. . .

Secretary Long: Mr. President, the next paper is by Dr. R. H. Long of the North Carolina Western Hospital at Morganton. It is entitled "The Psychotic Aspect of Syphilis."

Dr. Long!

. . . Dr. Long presented his prepared paper. . . (Applause)

"THE PSYCHOTIC ASPECT OF SYPHILIS"

By R. H. Long, M.D., Morganton

It will not be the purpose of this discussion to devote much time to the consideration of syphilis and its relation to mental disease from an historical standpoint; however, there is so much of interest in this connection that a few words depicting the metamorphosis of medical opinion may not be amiss. Syphilis, as a distinct entity, has been known and described since the discovery of America by Columbus; likewise, the symptom complex known today as General Paralysis of the Insane has been described in texts since 1820, but the two conditions were not definitely linked together

until comparatively recent years. In 1857 Esmarch and Jessen expressed the opinion there was a definite relationship between the two, but this theory received little support. It was not until the development of the Wasserman test in 1906 and the demonstration in 1913 by Moore and Noguchi of the spirochete in brains of those dying from General Paralysis that it was definitely established that General Paralysis of the Insane was always caused by syphilis.

Syphilis produces in the brain two very important clinical syndromes, one, General Paralysis of the Insane, whose symptoms are due to involvement of the gray matter of the brain itself, and the other, Cerebral Syphilis, in which the symptoms result from involvement of the supportive structures in the brain. Other syphilitic psychoses have been described, chiefly as the result of some dominant symptom, such as neurasthenia, paranoid forms with and without tabes, epileptic forms, short hallucinatory confused states, etc., but these are relatively unimportant and this presentation will be restricted to the consideration of General Paralysis of the Insane and Cerebral Syphilis. The first part of this paper will include a general consideration of these conditions, including the treatment, and part two will deal with the incidence of syphilis of the nervous system at the North Carolina State Hospital at Morganton.

GENERAL PARALYSIS OF THE INSANE

This is always a late syphilitic manifestation and develops from two to thirty years after infection and is produced by a progressive meningoencephalitis leading to a degeneration of the parenchyma. It is estimated that between 2 and 3% of all luetics and that four times as many men as women develop General Paralysis. In untreated cases death usually occurs in two to five years after the onset of paretic symptoms. In a survey in 1918 Raynor showed 3.5% spontaneous remissions in untreated cases while with modern methods of treatment the remission rate has been increased to 21.5%.

Just why certain individuals develop syphilis of the nervous system and others in similar circumstances do not is a question yet to be answered satisfactorily. A peculiar strain of the infecting organism has been suspected as being the cause of this difference, but it is known that more than one person may be infected from the same source and some of them develop General Paralysis while others do not. It is a well known fact that very often, too often to be merely incidental, those suffering from General Paralysis are positive in the assertion they have never had primary or secondary lesions and that syphilitic infection was never suspected until a serological examination later in life disclosed its presence. Formerly, high living, alcoholic and sexual excesses, worry and overwork, etc., were considered as actual causes of General Paralysis, and, while they may still act as predisposing factors, in that they may lower the resistance of the individual to any infection and afford opportunity for luetic infection, the

part they play in the actual production of this condition is relatively unimportant. It was formerly taught that those in the higher walks of life, the professions, and those whose cerebral activities were more complex and developed were more susceptible, but McKinley showed by statistics in 1928 that General Paralysis was proportionately more frequent in England and Wales in lower occupation classes. It has also been suggested that inadequate treatment in the earlier stages of syphilis predisposes to the later development of General Paralysis. Although this is not fully established, there certainly seems to be some relationship, and we frequently see it develop in those who receive insufficient treatment in the early stages. It has been shown that the nervous system is involved in the early stages of the disease while the entity known as General Paralysis does not manifest itself until many years later. By a review of over 2,000 patients treated only by hygienic measures and with all specific measures withheld Bruusgaard showed that only 3.4% developed neurosyphilis, and contended that insufficient treatment during the early stages predisposed to later visceral and neurosyphilis. Stokes gives a very timely warning in this connection in his idiom, "No rest until a spinal test." While psychiatric opinion on this point is not yet crystallized, it is a favorite idea that there exists in the individual who later develops General Paralysis a constitutionally defective cortex, which is fertile soil for the spirochete. In this way we may explain conjugal syphilis in which one partner is paretic and the other is not.

The question of trauma precipitating the development of General Paralysis is often raised and industrial boards are called on to make a decision. In this connection it should be kept in mind that the onset of this condition is often insidious, the early symptoms being overlooked or minimized and that an injury may result from the patient's poor judgment or muscular coördination. Quoting from Noyes, "To justify the conclusion that injury activated a preclinical paresis the symptoms must appear from one to thirty months after the accident. It cannot be stated, whether or not, in the absence of trauma, a person in such a preclinical stage would have developed General Paralysis. At times the trauma does not activate a pathological process, but merely aggravates one already existing, although no symptoms had been observed."

SYMPTOMS AND SIGNS

It seems out of place here to devote much time and space to an elaborate discussion of symptoms and signs with which we are all more or less familiar and which can be found in any good text published within the past fifty years—in fact, the older descriptions are essentially the same as more recent ones; however, slight reference will be made to some of the more important and significant ones. The early prodromal period is especially important and may be marked by changes of affectivity and character and by neurasthenic and psychasthenic manifestation. It is in the early stage that defects in social and moral character may prove calami-

tous, as the mental symptoms are so insidious in their development that deteriorating changes are overlooked. The fastidious patient may become careless in his dress, neglectful of the social proprieties and deficient in his sense of ethical values. The previously successful business man may make serious mistakes as a result of his failing judgment, and it is here that early detection of the developing paretic process may be of inestimable value in preventing the dissipation of his fortune. Momentary periods of confusion or an inability to grasp a situation and to act promptly and correctly may lead to serious accidents in the early stages where the mental disorder has not been detected.

In the fully developed stage several clinical forms are recognized as follows:

(1) Simple dementing form
(2) Expansive form
(3) Depressed form
(4) Lissauer's type
(5) Juvenile form (congenital)

In the *simple dementing form* the process is characterized by a slow but progressive dementia with few, if any, delusions or disturbances in the psychomotor field.

The expansive form, no longer emphasized as distinctly characteristic, as the title suggests, is characterized by a sense of well-being, delusions of great wealth and grandeur, etc. In this group is placed an excited or galloping form, which usually runs a rapid course and terminates in death.

In the depressed form the patient is melancholic and often entertains hypochondriacal and nihilistic delusions. Ideas of unworthiness may lead to suicide.

In Lissauer's type is placed those cases which show atypical clinical and pathological features. In addition to the usual paretic symptoms, localizing neurological symptoms and signs are noted, depending on the particular cortical area involved in the atrophic process. Here we find aphasic speech disorders, epileptiform attacks confined to one side of the body, unlateral facial paralysis, hemiplegia, etc.

Juvenile Paresis occurs in the child or adolescent as the result of congenital syphilis. The age at which it develops corresponds in a general way to the incubation period in the adult, therefore the onset is usually observed between the ages of five and twenty years. Delusions and excitement are usually not so prominent as in the adult form. There is usually a history to the effect that the child seemed quite normal in early childhood, learned well in school and seemed a normal child until at the onset of this condition a gradual deterioration set in and he became more and more demented. Often arrested physical development is noted.

The physical signs of General Paralysis are fairly constant and characteristic. During the early stages the clinical picture is often that of

neurasthenia and a mistaken diagnosis may be made and lead to loss of valuable time. In the fully developed stage the physical signs are pathognomonic and easily detected. The eye almost invariably becomes involved at some stage, giving rise to ptosis, unequal pupils and the Argyll-Robertson type in one half the cases. A progressive muscular weakness occurs and fine tremors of the fingers and around the lips are fairly constant. The speech of a fully developed paretic shows a characteristic slurring and uncertainty in enunciation. This is especially true in polysyllabic words in which labial consonants predominate. The knee jerks are usually increased, but if tabetic process coexists, as often happens, they may be absent. Convulsive seizures are noted in about 75% of all cases and apoplectiform attacks are common. Cerebral hemorrhage does not often occur during these attacks, but, of course, if it does a persistent paralysis results.

Serologically the Blood Wassermann is nearly always positive in untreated cases. The spinal fluid is always Wassermann positive in Neurosyphilis and the cell count is often much increased. Of great importance in differentiating General Paralysis from other types of Neurosyphilis is the colloidal gold test in which the precipitation is most marked in the first few tubes.

TREATMENT

The treatment of General Paresis has been almost completely revolutionized within the past twenty years. Prior to that time the treatment was almost entirely symptomatic, except when, quoting from Mendel, syphilis is present as a predisposing factor, the patient should receive specific treatment. In 1917 Wagner Von Jauregg of Vienna initiated the Malaria treatment with a marked improvement in the rehabilitation rate. As a result of this work he was awarded the Nobel Prize in Medicine in 1927. The treatment consists in the inoculation of the patient with tertian Malaria, by direct inoculation with the mosquito or by administration of 3 to 6 cc. of infected blood either intramuscularly or intravenously. After the incubation period the patient is permitted to have 12 to 15 paroxysms when the infection is terminated with Malaria.

Within recent years various physical means have been employed to produce hyperpyrexia, particularly radiothermy and diathermy. These have the advantage of producing a high fever which can be controlled at the will of the operator. When the fever is maintained for several hours the treatment is usually given weekly, but when the fever is permitted to drop as soon as it reaches the desired height the treatments may be given every two or three days. About the same results are claimed for this method of treatment as for Malaria, and it has many enthusiastic supporters in this country. However, the general consensus of opinion seems to be in favor of Malaria.

The chemical agent par excellence is Tryparsamide, which may be given in conjunction with the fever treatment or alone. It is usually given once

weekly in two to three gm. doses intravenously and often must be given two or three years before a serological cure can be obtained. It is an interesting fact that this preparation of arsenic is essentially ineffective in the other forms of syphilis.

CEREBRAL SYPHILIS

In the foregoing consideration we have been dealing with a condition in which the cerebral cortex itself is chiefly involved, and we now consider that form of neurosyphilis in which the supportive framework—the Meninges, vessels and glial tissues—is primarily involved while the parenchyma partially or entirely escapes. Three distinct types are recognized—Meningitic, Endarteritic and Gummatous—depending, of course, on the particular tissue affected. These types are rarely clear and distinct, and frequently symptoms of the various forms will overlap and even paretic symptoms may become evident, if the inflammatory process involves the parenchyma. This type of syphilis of the nervous system is not so common as General Paralysis, as shown in a series of 2468 cases of Syphilitic Mental Disorders in the Boston Psychopathic Hospital in which 91.2% of the cases were General Paralysis. Likewise, it tends to occur somewhat earlier after infection than does General Paralysis and is at times noted in the primary and secondary stages, as evidenced by serological studies of the Spinal Fluid, although the Wassermann reaction is usually negative.

In the Meningitic form there is present a subacute meningitis usually most marked at the base involving the cranial nerves. It usually develops from one to five years after infection. The physical symptoms are dependent naturally on the particular area involved, but rarely is the acute fulminating type of meningitis of other infections seen. In addition to the usual signs of meningitis, even though they are somewhat less pronounced, there are present symptoms of cranial nerve involvement, such as ptosis, strabismus, facial neuralgia or paralysis, impairment of smell and hearing, etc. When the meninges of the convexity are involved, mental symptoms become more prominent and localizing symptoms of the motor and sensory areas may appear. The mental picture is essentially that of an organic condition in which the patient is semi-conscious—somnolent—and shows a muttering confusion and delirium.

The endarteritic form of cerebral syphilis usually develops within three to five years after the initial infection and often the symptoms are those of cerebral arteriosclerosis, in which emotional instability, irritability, loss of memory and more or less apathy to his work are outstanding. Apoplectiform attacks with resulting hemiplegia are seen, but the more slowly developing vascular changes of thrombosis are more common. There is a surprising tendency for these apparently serious neurological disorders to recover partially, but the patient is usually left with increased physical and intellectual impairment.

The gummatous type of cerebral syphilis is comparatively more infrequent than the others and the dominant symptoms depend on the location

of the gumma. While this may be circumscribed and vary in size and produce definite localizing signs, a diffuse infiltration is more often present with some meningeal inflammation. This gives rise to symptoms of meningeal involvement in addition to increased intracranial pressure and focal symptoms of tumor.

The treatment of Cerebral Syphilis differs from that of General Paralysis in that employment of artificial fever has proven less satisfactory, although there is an increasing tendency to use it in any form of resistant neurosyphilis. Tryparsamide is the favorite chemical agent and is employed in two or three gram weekly doses given intravenously. In the early stages this has proven particularly reliable, but, as in all forms of syphilis, treatment should be continued over long periods of time.

OBSERVATION AT THE STATE HOSPITAL, MORGANTON, N. C.

Contrary to general opinion the two State Hospitals for white insane in North Carolina are not crowded with syphilitic patients; in fact, our records at the State Hospital at Morganton show that syphilitic mental diseases comprise a small proportion of our admissions, and I believe the same holds true at the State Hospital at Raleigh. From the biennial report of the State Hospital for Negroes at Goldsboro a much higher incidence is seen. In the four-year period ending June 30, 1936, a total of 1818 patients were admitted to that institution of whom 551 or 30% were diagnosed as having syphilis of the nervous system. In the State Hospital at Morganton only 5.5% of our admissions for the past four years were the direct result of syphilitic infection. Syphilis often occurs co-incidental with some other form of psychosis, therefore, this figure does not include all patients with syphilis. In addition to this figure, 2.1% of our admissions were suffering from some other form of insanity and did not show indications of syphilitic involvement of the nervous system, although the Blood Wassermann was positive. By recapitulating we find that 7.6% of all admissions to the State Hospital at Morganton for the past four years were syphilitic, that 5.5% were suffering from syphilitic mental disease while 2.1% had some other form of psychosis with no demonstrable involvement of the nervous system. It should be kept in mind that some of these patients who are classified as without nervous system involvement at the time of diagnosis may later show a positive spinal fluid and other evidence of Cerebro-Spinal Syphilis in spite of treatment.

We regard all patients with positive Wassermann, one plus as well as four plus, as syphilitic, therefore, many patients showing only a one plus reaction are included in these figures. We base this conclusion on the fact that we are often dealing with a very late manifestation of the disease during which time the patient has built up some immunity and thus may have altered the reaction or has received so much treatment that the reaction has been modified. Our percentage of syphilitic mental disease is much smaller than in some of the Eastern Hospitals, statistics from New York

Hospitals showing 11.3% of all admissions suffering from syphilitic psychoses; however, our statistics show a very sharp increase in this type mental disorder within the past four years. Comparing the records for this period we find in the fiscal year 1932-1933 at the State Hospital at Morganton exactly 4% of our admissions were suffering from Syphilis of the Nervous System. In the year 1933-34 this climbed to 4.5% while in 1934-1935 the percentage jumped to 6.4% of the total admissions. In 1935-1936 this increased still further to 6.7% of the total. The admission rate of those suffering with syphilis but without nervous system involvement has also increased in proportion, as shown by the fact that in 1932 1.5% of the admissions had positive Wassermanns and that this had increased to 2.9% in 1936. Our records in regard to the incidence between the two sexes are about in keeping with those previously quoted. Of the total 98 patients with syphilis of the nervous system in this four-year period 75 were men and 23 were women—a proportion of a little over 3 to 1.

These figures deal with fairly recent cases—i.e., admitted within the past four years, and now let us consider the entire population. This can roughly be divided into two equal groups. Of the 2000 patients in the hospital approximately half of them have been admitted within the past four years while the other half represents the accumulation of all admissions since the hospital was opened in 1883. We still have a few patients who have been here fifty years, the oldest syphilitic patient having been here since 1908. Among this older group of approximately 1000 patients there are at this time only 26 still here who have had syphilis, none of which involved the nervous system. Of these 26 known syphilitics only 2 now show a positive Blood Wassermann. It is obvious, therefore, the percentage of old syphilitics in the entire present population is negligible. The reason for this small percentage is the syphilitics have either died out long ago or have returned to their homes. When we combine the two groups we see the percentage rise considerably. In the total population there are 94 patients now present who at some time or other have shown positive blood Wassermanns. Of this total, 55 have become negative under treatment and the reaction reduced in many others. Subtracting these from the total we find there are now present only 39 cases who show a positive Wassermann. With a little calculating we find that of the present population, 4.7% have been syphilitic at some time or other, 2% still show positive Wassermann and 2.7% have become negative.

A few words in respect to the routine procedure and treatment employed at the State Hospital at Morganton. Routine blood Wassermanns are made by the State Laboratory on each new admission. When a positive report is received the spinal fluid is sent in for Wassermann. If the spinal fluid Wasserman is negative and no neurological symptoms are present we give the patient the routine treatment recommended by the State Board of Health, consisting of Neo Arsphenanine, Mercury and Iodides. If the

spinal fluid Wassermann is positive and associated with mental and neurological symptoms we make a diagnosis of syphilis of the nervous system. The patient is immediately given 5 cc. of citrated Malarial blood intravenously, this being obtained from a patient who is undergoing the Malarial paroxysms at the time. If his physical condition permits, he is allowed to have twelve to fifteen paroxysms and then the Malaria is terminated with quinine, 30 grs. daily usually being sufficient. When he has regained his strength, which he usually does promptly, he is given a series of twelve 3-gram doses of Tryparsamide intravenously, one dose weekly. At the end of this time a second blood and spinal fluid Wassermann are made and he is permitted a rest period of eight weeks. By this time if no clinical improvement is noted a second Malaria inoculation is usually given; however, it should be kept in mind that improvement after Malaria may be delayed as much as one or two years. Tryparsamide is administered as above outlined throughout the remainder of the patient's residence in the hospital with occasional rest periods and serological tests. A Clark Hyperpyrexator has recently been installed, but has not been used sufficiently to justify an opinion as to the results. An effort is made to keep all patients under treatment as long as they stay in the hospital or until there are no indications for its continuance.

A satisfactory evaluation of the result of Malarial treatment is next to impossible in our State Hospital for several reasons. First, many of our patients are admitted in the terminal stages and their inclusion in the records would not seem justified. All authorities agree and the reason is obvious that the prognosis in General Paralysis is much better in the early stages than later when actual destruction of brain substance has occurred. Secondly, many of our patients are paroled to their relatives before the treatment is completed and no reliable follow-up can be obtained because of inadequate force of field workers. However, after making due allowances because of these handicaps some idea of the results may be obtained by these figures. Of the total number of cases of neurosyphilis treated within the past four years 30% have shown varying degrees of improvement and have returned to their homes, 7% have shown no improvement and 48% have died. The remaining 15% are still in the hospital. Some of these have improved under treatment while others have been too feeble to undergo intensive treatment. We have seen marked serological improvement with little, if any, improvement in the mental condition, and on the other hand we have also seen improvement in the mental picture with practically no change in the serum reaction. We have also noted in patients who have had a great deal of arsenical treatment it is often very difficult to get a typical tertian Malaria response—i.e., a paroxysm every third day.

COMMENT

If these remarks serve no other purpose than to emphasize the necessity of adequate treatment in the early stages of syphilis they will be worthwhile. When we see the hope of recovery gradually fade as the years pass

without treatment, dropping from 85 to 90% absolute cure in the early stages to a questionable 21% when the nervous system has become involved in the late stages, it is self-evident that adequate treatment in the early stages is mandatory.

At the same time we must not be unmindful of the fact that a recovery rate of 21% in the late stages is an accomplishment worthy of praise. However, this cannot be attained except with great patience and perseverance. The treatment must often be continued for longer priods of time than is necessary in the early stages and also, as the disease usually becomes evident later in life after vital organs have become impaired, the general health of the patient is not so good and he must be watched and guarded for complicating diseases more closely than in the early stages when he is more robust. Even though there may be some question as to the completeness of the recovery of neuro-syphilis even after competent and tedious treatment, there can be no doubt of the fact that we can prolong the life of the patient and in many instances restore him to a self-supporting life.

The best treatment for late syphilis is adequate treatment for early syphilis.

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Secretary Long: Mr. President, and Gentlemen of the Society: The next paper is by Dr. Bayard Carter, on "Preventive Medicine in Relation to Maternal and Infant Mortality and Morbidity."

Dr. Carter!

. . . Dr. Carter then presented his prepared paper. . . (Applause)

PREVENTIVE MEDICINE IN RELATION TO MATERNAL AND INFANT MORTALITY AND MORBIDITY

Bayard Carter, M.D., Durham, N. C.
(From Section on Public Health and Education)

I feel privileged in being permitted to address the General Session on this subject because in obstetric patients we, as a profession, find many neglected fields of preventive medicine. The major factor in the neglect of this important branch of mdicine is for the most part the ignorance of the

patients, an ignorance which may only be overcome by persistent and continued efforts on our part and by the combined efforts of civic, church and welfare organizations. A certain part of the responsibility for this neglect is quite rightly being placed directly on us doctors. The purpose of this paper is briefly to outline under certain major headings those preventive measures which must be stressed to build up true standards of protection and care for the pregnant woman and her offspring.

Prenatal care. What can be accomplished by good prenatal care is well known to all of us. Maximal standards of prenatal care, minimal standards and no standards at all give results in maternal and infant mortality and morbidity which differ as widely as do the types of care. It is our feeling that there should be available to the attending physician facilities for the immediate hospitalization of pregnant women who have at any time during pregnancy bleeding from the uterus, who show any form of toxemic symptoms and who are found to have by examination or are thought to have by history of previous difficult labor, with either a stillborn or an injured child, deformed pelves. Undoubtedly such hospitalization would reduce maternal deaths from abortions, extra-uterine gestations, placenta praevia and premature separation of the placenta provided that conservative obstetric principles were followed. It would also be noted that our death rates for mother and child from the so-called toxemias of pregnancy would decrease in marked degree. The prevention of those conditions in pregnancy, which continue to maintain our American incidence of interferiential and operative procedures on the pregnant woman so high, will in itself reduce our death rate from puerperal infection.

Syphilis: The importance of early diagnosis and treatment of syphilis in the pregnant woman has been proved again and again by the results obtained in lowering fetal mortality in addition to restoring the woman to health. Such admirable reports as those of McCord who reduced stillbirths from 70 percent to 8 percent and who increased the incidence of children born alive of syphilitic mothers from 30 percent to 93 percent, show what preventive medicine can do. The report of Laurent showed that in 563 syphilitic women who were untreated only 25.6 percent of the infants remained alive after three months whereas in 191 syphilitic women who received treatment 91.9 percent of the children remained alive after three months. The report of Bradford for the year 1936 for the Charlotte Maternity Clinic showed that 226 or 26 percent of the new patients registered for prenatal care had positive Wassermans. There were delivered 165 syphilitic patients after treatment and 148 living children, 8 stillbirths and 9 miscarriages resulted. In short 88.6 percent living children was produced.

Abortion: During the same period of time in which we were delivering 1300 ward patients, 303 patients with abortion were admitted. In short approximately 1 in every 5 admissions in that period of time was an admission for treatment of abortion either spontaneous or induced. In this series 16 patients died of infection, a death rate of approximately 5

percent. Certainly preventive measures can reduce such death rates. Abortal infection is merely infection of a puerperal uterus and as such can be prevented only by strict preventive measures.

Extra-uterine Gestation: In the same time covered by our series of 1300 ward deliveries there were 2 maternal deaths shortly after admission and before corrective measures could be instituted caused by fatal intra-abdominal hemorrhage from ruptured ectopic pregnancy. In each patient had medical aid been sought at the time of the first menstrual irregularity or the appearance of atypical vaginal bleeding, from a meagre history in each case extra-uterine gestation would have been suggested. Only by early diagnosis can the maternal mortality due to extra-uterine gestation be lowered.

The Toxemias of Pregnancy: In this group of patients we find our highest figures for maternal and infant mortality and morbidity. In our series of 1300 ward deliveries we found that 1 in every 3 patients was admitted for a severe form of non-convulsive toxemia. No patients with "border line" symptoms and findings and no patients with either mild or severe hyperemesis gravidarium were included in arriving at this figure.

One in every 16 patients admitted in these 1300 patients was admitted for convulsive toxemia, i.e. eclampsia.

Since prevention in the form of prenatal care is the only true treatment for toxemia we were careful to keep an accurate record of the prenatal care sought or obtained in this toxic group. No prenatal care was sought in 48 percent of the patients; 44 percent admitted only 1 or 2 visits to the doctor and in only 8 percent was it possible to prove conscientious care on the part of the patient or the physician.

In this toxic series 70 percent of the patients was from rural districts and 30 percent was from city or town. Approximately 25 to 28 percent of the patients was single.

Maternal deaths for patients from the rural districts totaled 71.4 percent, for the city or town patients 28.6 percent. Fetal deaths from rural patients totaled 65.7 percent, from city or town patients 34.3 percent.

The incidence of previous eclampsia in the multiparae of this series was 5.24 percent and of previous definite cardiovascular renal disease was 11.53 percent.

An uncorrected death rate for all infants born after the fifth month of gestation and which included all macerated, still born, premature and term fetuses and also neonatal deaths would approximate 22 to 23 percent.

An uncorrected figure for maternal death rate in the toxic series would total 3 percent.

It is interesting to note that during the same period of time 200 private care patients were delivered without a single case of eclampsis or a single maternal death. The incidnce of non-convulsive toxemia in this series was but 4 percent.

Similarly we may contrast the figures given with those obtained by Bradford in the Charlotte Maternity Clinic. The incidence of toxemia was 7.12 percent, the maternal mortality was 0.20 percent and the fetal mortality was 0.80 percent.

Certainly preventive medicine will give excellent results.

PREVENTIVE FEATURES IN THE PROBLEM OF NUTRITION

The investigation of the problems of nutrition among the pregnant women who come to our clinic stands as a great unexplored field for preventive medicine. It is our firm and honest belief that not one in 60 patients applying for prenatal care has adequate diet as we understand the nutritional needs of the pregnant woman. We find a marked anemia in over 60 percent of the patients and rarely do we have at initial examination a hemoglobin reading of 60 to 65 per cent. Obesity, due to faulty type of diet in most patients, certainly totals 30 to 40 percent. Malnutrition in rather marked degree will total 10 percent. These figures for those admissions to the wards of patients suffering from the toxemias of pregnancy show faulty diet by admission of patients, 85 percent; obesity, 49.3 percent; anemia, marked, 60.8 percent. It is also interesting to note that in our toxemia series 25 to 28 percent of the patients is illegitimately pregnant. Ross, of our department, in reviewing the statistics of morbidity and mortality in North Carolina, suggested that in those districts from which most of our toxemic patients come there also is found a higher percentage of pellagra and other deficiency diseases. Certainly we cannot but be impressed by the poor nutritional state of the patients we receive from rural districts.

Obesity is pathologic. In obstetrics it makes difficult the diagnosis of position of the fetus, it may cause dystocia and the necessity for operative delivery; hemorrhage and the birth of large children are common. Infections of the labial folds and of the groins are common; repairs are liable to break down. Any experienced worker in the field will admit a dislike for obesity in the pregnant woman.

There is no more reason why investigation and treatment of obesity in pregnancy should not be forwarded than that the anemia or malnutrition should be neglected.

CHILD SPACING AND PREVENCEPTION

A vigorous educational program for the laity and for the medical profession should be forwarded to make possible the spacing of pregnancies and prevenception of pregnancies. Such a program would fill a great need in the preventive work necessary in that group of women in which there is medical indication for proper spacing of pregnancies in the interest of the woman's physical and mental health and in that group of women in which there is definite or suggestive evidence of pre-existing disease which makes essential a prevenceptive regime.

Holden defines child spacing as the planning of each conception and pregnancy with a view to the best time and season, both for mother and child. In all women too frequent and too numerous pregnancies are to be avoided in consideration of their physical and mental health even though the economic factors are not considered, although we feel in many patients they should be given great consideration. Holden points out that the maternal death rate is higher below 15 years of age than at any other time and that from the ages of 15 and 20 years it is higher than from 20 to 29 years. Between 20 and 24 the maternal death rate is 5 per 1,000 live births, between 25 and 29 it shows an increase and then rises rapidly after 30 years, by five year groups, from 7.4 to 10.3 to 13.1 to 19.2 at 45 years. The infant mortality also increases when the mother is less than 20 and more than 35. Below 18 years the infant death rate is 160; at 18 and 19 years it is 129, a rate not reached again until after 40 years. Between 20-24 years the infant death rate is 109.5; between 25-29 years the rate is 101.4; between 30 and 34 years the rate is 104.7. Holden continues by pointing out that a review of the maternal death rates shows that the greatest risk is run with the first delivery as compared with any delivery through the fourth. Figures show that the maternal death rate drops from 6.2 per 1000 live births at the first delivery to 4.3 at the second and 1.9 at the third. There is then a sharp rise to 4.2 at the fourth, 7.5 at the fifth and sixth and 8.2 at the eighth and subsequent deliveries. Infant mortality rates have much the same curve as the maternal rates. First babies die more often than the second babies but thereafter the rate rises steadily to attain a figure 50 percent higher at the seventh and twice as high at the tenth delivery.

Numerous figures might be presented to confirm the need for child spacing and prevenception. We have adopted the policy of making the work of this nature a main feature for the type of patients we see in our dispensaries. The incidence of nutritional diseases, of the so called toxemias, of cardio-vascular renal diseases, of tuberculosis, of mental disorders, of "criminal" infected abortions, of puerperal fever, of patients exhibiting the trauma of repeated labors continues to increase and to constitute the major portion of our work. The medical student should be taught the need for preventive care in this group of poorly informed and poorly endowed patients. For teaching students the need for child spacing and prevenceptive technic we have adopted a rather didactic list of conditions which place the patients in that group requiring instruction for child spacing efforts or for efforts at definite prevenception based on existing contraindications to pregnancy. In this didactic presentation to the students we make no attempt to cover the economic features, which should be reported on by lay groups rather than by physicians. We do feel that the economic features have such a bearing on the health of the patients, as shown by our figures given earlier in considering abortion, syphilis, the toxemias of pregnancy and the accidents of pregnancy, that sound sociologic and welfare surveys and reports are essential for those districts which

vitally concern all of us as members of a profession often held accountable for conditions of living and of health over which we have no control save when we are called to attempt therapeutic measures for patients who should have sought preventive advice from our profession.

The contraindications to pregnancy which we teach listed briefly are:

1. Too frequent and poorly spaced pregnancies.

2. Developmental defects in the mother.

3. Recent pelvic operations or recent Cesearean Section.

4. Malignant disease of the pelvis under radiation therapy.

5. Pelvic neoplasms prior to operative or corrective measures.

6. Diseases of the kidneys: previous nephrectomy, calculus, stricture, pyelitis, hydronephrosis, nephritis, tuberculosis, etc.

7. Diseases of the heart:—myocarditis, rheumatic heart disease, cardio-vascular renal disease and essential hypertension.

8. Diseases of the lung:—tuberculosis and bronchiectasis, etc.

9. Diseases of the blood:—anemia, leukemia.

10. Diseases of the skin:—dermatitis herpetiformis.

11. Diseases of the nervous system and mental diseases:—Huntington's chorea, hereditary optic atrophy, dementia praecox, manic depressive psychosis, chorea, multiple sclerosis, myelitis, etc.

12. Eugenic Board patients:—patients passed on by the Eugenic Board for sterilization.

13. The toxemias of pregnancy.

14. Metabolic disturbances:—diabetes, hyperthyroidism, hypothyroidism, tetany, osteomalacia, malnutrition and avitaminosis.

15. Diseases of the eye:—neuritis of the optic disc and albuminuric retinitis.

16. Diseases of the ear:—otosclerosis.

17. Miscellaneous indications:—varicosities, gall bladder disease and many other conditions.

The list in no way implies that the patients seen with the various conditions given are not individualized by thorough study by all diagnostic agencies of our clinics. It simply implies that in our own experience these patients should be considered candidates for prevenceptive advice, for careful follow-up and for all available treatment to prevent pregnancy during the course of therapeutic corrective measures.

INTERRUPTION OF PREGNANCY

To emphasize what does occur when patients with pre-existing disease do not seek prevenceptive advice from physicians we present a series of 100 patients upon whom interruption of pregnancy was done prior to the fifth month of pregnancy. During the time in which we delivered approxi-

mately 1300 ward obstetric cases we studied 220 patients referred by physicians for consideration of the need for interruption of pregnancy. In short one in approximately every 7 admissions in the period covered by this series, was admitted for possible interruption of pregnancy and approximately one in every 15 patients had interruption done. These figures speak for the vigilance of the practitioners who referred these patients and refutes the argument that our profession does not function satisfactorily in the matter of prenatal observation and care when the patients show sufficient intelligence to consult the doctor.

Ninety-nine of these patients were ward patients and one, a doctor's wife with nephritis, was a private patient. Of these patients 74 percent was white and 26 percent was colored, 77 percent was from rural districts and 23 percent was from city or town. Multiparae constituted 94 percent of the patients and primiparae constituted 6 percent of the patients. The method of interruption was in 34 percent by dilatation and curettage and in 66 percent by abdominal hysterotomy. We perhaps were ultra conservative in deciding in the remaining 120 patients, upon whom interruption was not performed, that the pregnancy should be permitted to continue under close supervision.

Of the 100 interruptions performed the following indications for the procedures were found:

1. Diseases of the kidneys and ureter:—

Nephritis, 49 patients; previous nephrectomy with pyonephrosis, malnutrition and anemia, 2 patients; ureteral calcus and anemia, 1 patient; ureteral stricture, pyelitis and anemia, 1 patient; pyelitis, anemia and malnutrition, 1 patient.

2. Central nervous system:—

Epilepsy, 3 patients; central nervous system syphilis, 1 patient; cerebellar tumor, 1 patient; basal ganglia lesion, 1 patient; psychoses, 3 patients; Eugenic Board patients, moron-incest, 1 patient; feeble mindedness, 1 patient.

3. Diseases of the heart:—

Mitral stenosis, 3 patients; aortic regurgitation, 1 patient; arteriosclerotic cardiovascular renal disease, 4 patients; hemiplegia, 1 patient.

4. Disease of the lungs:—

Pulmonary tuberculosis, 6 patients; pulmonary tuberculosis and bone tuberculosis, 1 patient.

5. Pelvic tumors:—

Myomata uteri, 6 patients.

6. Diseases of the blood:—

Anemia, 1 patient; Banti's disease, 1 patient; myeloid leukemia, 1 patient.

7. Diseases of the ovum:—

Missed abortion, 2 patients; hydatidiform mole, 1 patient; acute hydraminos, quintuplet pregnancy, premature separation of placenta, 1 patient.

8. Diseases of the skin:—

Dermatitis herpetiformis, 1 patient.

9. Miscellaneous indications:—

Gall bladder disease, 1 patient; colloid goitre and malnutrition, 1 patient; multiple lipomatosis, 1 patient; multiple varicosities, 1 patient.

There were no deaths in this series.

NEUROPSYCHIATRIC PREVENTIVE MEASURES

Prenatal care in its highest forms implies adequate protection of the mother's mental and nervous systems and prepares her for a normal type of delivery which is the best safeguard against neurologic injury to the child. There is no doubt that certain neuropsychiatric conditions in both mother and child are the direct results of certain policies and judgments followed in some persisting obstetric practices. Among such practices may be listed acouchement forcé, indiscriminate versions, "single pain delivery," the use of oxytocics and many interferiential procedures. Rosanoff discussing these problems in relation to neuropsychiatric complications states that the answer to them lies in the hands of the attendant at the time of delivery. He states that the intranatal period, or that time from the onset of labor to the delivery, is featured by the occurrence of cerebral birth trauma. The fetal period, or that time up to the onset of labor, can be separated from the intranatal period but the factors which give rise to neuropsychiatric disorders in the fetal period are in many instances indistinguishable from those of the intranatal period. Idiopathic epilepsy, many cases of mental deficiency and many cases of schizophrenic psychoses are found with greater frequency in the first-borns. Rosanoff feels that one quarter to one third of the 2,000,000 cases of pathologic mental deficiency in the United States must be attributed to birth trauma. He states further that evidence tends to show that many milder conditions such as stammering, lisping, left handedness and difficulty in reading and spelling may be due to birth trauma. He lists the clinical effects of cerebral birth trauma as of three types:—

1. Immediate such as coma, convulsions and cerebral palsies.
2. Traumatic residuals such as Little's disease and mental deficiencies.
3. Traumatic sequels such as idiopathic epilepsy and some deteriorating psychoses of adolescence.

As preventive measures from the standpoint of the neuropsychiatrist he recommends (1) selective child bearing; (2) preparation, mental and physical, for child bearing; (3) management of pregnancy to eliminate as far as possible those factors which complicate the condition; (4) lack

of meddlesome obstetrics; (5) avoidance of complicated and difficult labors.

All of these recommendations when applied to the pregnant state will also reduce to a minimum the incidence of the maternal psychoses seen during pregnancy and the puerperium. They will also help to prevent those distressing neurologic lesions found in the mothers after difficult delivery.

Other Preventive Measures: Time does not permit a discussion of other preventive measures. Among these measures I would list (1) careful Pediatric care for the children through periodic visits for examination and preventive measures; (2) the need for well conducted postpartum examinations for mothers; (3) the need for dental supervision and oral hygiene for the mothers; (4) a wide spread welfare organization which considers itself responsible for getting the patients to the doctor.

SUMMARY

1. Prenatal care is essential for all pregnant women if the maternal and infant mortality and morbidity are to be decreased.

2. The early search for and the proper treatment of syphilis in the pregnant woman will do much to increase the yield of live viable babies and will decrease in a marked degree the incidence of stillbirths and of neonatal deaths in the early weeks following delivery.

3. Early hospitalization is urged for all pregnant women who have during pregnancy signs or symptoms of toxemia, who have at any time during pregnancy bleeding from the uterus or who have deformed pelves as determined by examination or by a history of previous difficult labors with resulting stillbirths or deaths from fetal injury.

4. A great preventive field lies in the study of the nutritional status of the pregnant woman. Obesity, malnutrition anemia and the deficiency states may be corrected or controlled only by fundamental principles of prevention.

5. Child spacing and prevenception should receive especial consideration as two great aids in preventive medicine and should be forwarded by coöperation between all medical and social agencies.

6. The indications for interruption of pregnancy should be carefully reviewed from time to time by our medical groups and an intelligent program to encourage such procedures, when indicated, should be instituted.

7. A careful survey of the mental disorders arising in the mothers and of the neurologic and mental disorders of children following various types of disease in pregnancy and various interferiential and operative obstetric procedures should be instituted. Perhaps in this survey would be found facts which would enable us as members of a profession to apply further and well advised preventive measures.

8. An intelligent patient in the care of an intelligent doctor is the answer to most preventive and corrective measures. Until we can raise

the intelligence of the patients by means of medical, church, welfare and social agency activity we may expect the same appalling mortality and morbidity rates for mothers and children. We still cannot subscribe in any manner to the proposition that mid-wife care and education will solve the problems involved. We do think that elevation of the standard of obstetric teaching and the opportunity for postgraduate instruction for doctors will help us in meeting our part of the responsibility. Against such hope for improvement of the level of our preventive care stands that variable factor—the patient herself.

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. . . Various announcements were made at this time. . .

SECRETARY LONG: The next paper on the program is by Dr. Foy Roberson, distinguished surgeon of Durham, North Carolina, entitled "North Carolina Surgery—Past, Present and Future."

Dr. Roberson!

DR. FOY ROBERSON: Mr. Chairman, Gentlemen of the State Medical Society: I had to change the title of my paper just a bit.

. . . Dr. Roberson then presented his prepared paper, illustrated with slides. . . (Applause)

NORTH CAROLINA MEDICAL HISTORY—COLONIAL AND ANTEBELLUM

1585 TO 1860

DOCTOR FOY ROBERSON, Durham, N. C.
(From Section on Surgery)

FOREWORD

When I began this work, it was my intention to study the subject of "North Carolina Surgery—Past, Present and Future." However, after reviewing the archives of North Carolina Medical history, I found this subject quite too extensive. I, therefore, decided that this first paper should end with the 1861 meeting of the State Medical Society, when the war between the states was beginning. In a second paper I shall continue the story of medicine in North Carolina, and I plan to include in that paper or in a third paper the subject of medical education in the state. After these papers are finished, I hope to be able to make a more detailed study, over a period of several months, of the whole subject of Medicine and Surgery in North Carolina.

The truth of any subject lies embedded in its history, and only through a thorough study of history may insight and understanding be gained. In the diagnosis of diseases, a thorough history is essential, and when the history is recorded it becomes a permanent source of useful information. If, in our attempt to diagnose diseases, we do not secure a thorough and careful history, we are not likely to be good diagnosticians, and if we do not make a record of the history, valuable information is irrevocably lost. Throughout the history of medicine and surgery, carefully recorded data

have been of much value to the profession and to the laity. When no records have been kept, excellent clinical work has in a short time become a total loss. Historical facts, whether concerned with an individual case or with the medical profession itself, are always useful and interesting.

In the early days of the practice of medicine, before its scientific aspects became so highly developed, practitioners had more time in which to philosophize and think in terms of the personal aspects of their patients and of their clinical signs and symptoms. Nowadays, with the ever-increasing development of scientific methods and instruments of precision, one wonders whether medicine does not tend to lose some of its dignity as a profession and become less ethical and more commercialized—almost approaching, in fact, a trade. Our predecessors had more to contend with than do we in the way of quacks, nostrums and cults. They were laboring much in the dark because little was known of the cause, prevention, and treatment of diseases. Yet numbers of high-minded individuals practicing medicine and surgery had absorbed enough of the philosophy of Hippocrates and Galen to feel that medicine was a profession, not a trade, and that it should be guided by the highest ideals and standards.

In making these studies I have had access to the general library of the University of North Carolina and the medical libraries of Duke University and the University of North Carolina. I have consulted in some detail Connor's "History of North Carolina," Garrison's "History of Medicine," the "Transactions of the North Carolina State Medical Society," and numerous other volumes pertaining to the history of the state.

I am indebted to Dr. I. H. Manning, Dr. Hubert Royster, Dr. A. J. Crowell, Dr. T. D. Kitchen, Dr. Wm. DeB. McNider, Dr. Guion Griffis Johnson, and many others whom I should like to mention if time and space permitted. In this connection I should like to mention also the useful information obtained from an article by Dr. J. W. Long on "Early History of the North Carolina Medical Society," read before this body seventeen years ago on April 17, 1920, and that by Drs. McBrayer and Way on the "History of Medical Schools." Some of the slides have been taken from Dr. Long's publication.

In order that we may begin at as early a date as possible, let us consider Sir Walter Raleigh's first attempt to establish a settlement in Carolina. This was in 1585 (1). It has been estimated that there were about thirty thousand Indians living in Carolina at that time (2). Of course there were no white doctors, and there is no record that any came with Sir Walter. You are all familiar with the Indian medicine man and his methods of treating the sick. Before the coming of the white men to America, the Indians were a very sturdy and healthy race of people. No doubt, they had accidents incident to hunting and fighting; doubtless they also had malaria and other diseases which were endemic in Carolina. In general, however, they were a sturdy and healthy race of people before the coming of the white men, who brought with them, in addition to

whiskey, certain contagious diseases—principally small-pox, tuberculosis, syphilis, and the common parasitic diseases of the skin. From 1585 when Sir Walter Raleigh first attempted to settle in Carolina until 1685 when Carolina was finally established, medicine and surgery were practiced together, and I know of no historical fact showing that there was any specialization of medicine in Carolina. It is a well known fact, however, that specialization was practiced in Galen's time (3). Victor Robinson says (4) "In the year 162 a stranger entered Rome—it was Galen. In the midst of the barbers, bath-keepers, mid-wives, magicians, plaster-spreaders, ointment-makers, bleeders, cuppers, abortionists, makers of love-philters, venders of amulets, had come a disciple of Hippocrates. Specialism was rife in Rome, as we learn from Martial's irony: 'Cascellius extracts and repairs bad teeth; you, Hyginus, cauterise ingrowing eyelashes; Fannius cures a relaxed uvula without cutting; Eros removes brand-marks from slaves; Hermes is a very Podalirius for ruptures.' "

In a personal communication, Guion Griffis Johnson, who has recently written a book on the Social History of North Carolina, writes:

"I did not have the time to make a detailed study of the history of medicine in the colonial period and I cannot tell you when the first doctor was in North Carolina. It is certain, however, that there were never many doctors in the province and that each household was forced to take care of its own medical needs. Some settlers developed more skill than others at setting bones, drawing blisters, and letting blood, so that they gained a reputation of having "the gift of physic." Occasionally a slave was adept at medicine, and he was permitted by his master to hire his time and practice medicine to the exclusion of all other work. Many a settler lived and died without having been attended by any practitioner other than these self-taught men and women. The movement for medical reform in the antebellum period was aimed largly against these uneducated folk doctors and against the cults which were an outgrowth of folk medicine."

In the settlement both of Spanish and of British America, there was, to be sure, a transfer of Old World drugs, but on the frontier the compounds of the apothecary were always extremely scarce. Settlers early learned the medicinal use of certain native herbs from the Indians and discovered the value of others by experimentation. Many guarded their knowledge with the utmost secrecy in order that they might practice on their neighbors in the role of a folk doctor, for a knowledge of the mysteries of the "native simples," as the herbs and barks were called, was one of the distinguishing characteristics of the folk practitioners. Dr. John Brickell gives a list of native herbs and their medicinal uses in his *Natural History of North Carolina,* and there is another brief list in the *Records of the Moravians* translated by Miss Fries. On the eve of the Revolution Miss Janet Schaw, a Scotch "Lady of Quality," visited North Carolina and found near Wilmington an old gentleman much interested in physic and botany. She says of him, ". . . there is hardly a medicinal herb or plant

produced in any climate that he has not discovered something here to answer its purpose." (E. W. Andrews and C. M. Andrews, *Journal of a Lady of Quality,* p. 165).

The "prevailing diseases" of the colonial period seem to have been very similar to those of the antebellum period: malaria, typhoid fever, dysentery, pneumonia, small-pox, measles, and other common diseases of childhood including diphtheria, scrofula, erysipelas, the venereal diseases, yaws among the Negroes, and such skin diseases as scabies and impetigo. Dr. Brickell gives a list of these and another may be obtained by a tedious gleaning of the *Moravian Records.* I am interested in the theory that America gave Europe syphilis in return for malaria, but I have found nothing in the North Carolina colonial documents which throws any light on the controversy. Certainly both diseases were in North Carolina at an early period. Antebellum doctors declared that the curse of North Carolina was not slavery but malaria. Miss Schaw described the effect of malaria upon the "peasantry" around Wilmington but attributed the sallow complexion, the languid eye, and the tumid abdomen to New England rum rather than to the true cause. (p. 153). Miss Schaw's brother, Alexander, writing of the conditions in North Carolina in 1775, said, "The lower parts of the province are subject to agues, pleurises, and bilious complaints; the people of the back counties are not subject to these disorders." (p. 280). The progress of these endemic fevers into the back country was a cause of alarm among the early antebellum doctors and of much theorizing among the later ones. Of course, the antebellum doctors, like the earlier colonial doctors, confused typhoid with malaria and thought the cause of both to be miasma. Miss Schaw complains of the terrible wind and rain storms in lower North Carolina and explains them thus: "But this is a necessary evil, and makes that circulation which alone can purify the putrid air that rises from bogs and swamps." (p. 174).

If medicine was in the hands of the local folk doctors in colonial North Carolina, so also was surgery. I have found no description of a surgical operation performed by an untrained practitioner, but the *Records of the Moravians* tell briefly of operations performed by Dr. Kalberlahn and Dr. Bonn in Bethabara. Dr. Kalberlahn once performed successfully a difficult cranial operation. (See also J. H. Clewell, *History of Wachovia,* p. 60). He died before the Revolution, but Dr. Bonn won distinction as a surgeon with the Revolutionary army.

As you know from North Carolina history, Carolina was a proprietary colony from 1665 to 1730 (4) and was owned by eight Lords proprietors who lived in England and governed through deputies (5). During this period there is record (6) of certain doctors who lived in North Carolina. In an article (1) in the "North Carolina Booklet," entitled "Some Physicians of the Albemarle," Richard Dillard, M.D., states that Dr. John King was undoubtedly the earliest physician in the Albemarle section, and among the records in the court house at Edenton may be found his bill

for services rendered a man named Workman on July 26, 1694. This was practically thirty years after North Carolina became a state and 109 years after the settlement of Sir Walter Raleigh's colony on Roanoke Island.

Dillard states also that in 1702 Dr. Godfrey Spruill located at Edenton. To quote: (2) "Information being made by Captain Thomas Blount that Elinor Adams by an infirmity and indigence is in great danger of being lost for want of assistance, ordered that Captain Thomas Blount treat with Dr. Godfrey Spruill in order to her cure and that Dr. Godfrey Spruill be paid for his physick and cure by the church warden five pounds and that Captain Thomas Blount be requested by vestry to endeavor to oblige the said Elinor to serve the doctor for the use of his house and nursing." It seems that Dr. Spruill was employed by the vestry of St. Pauls Church at Edenton. "George Allan, Chyrurgeon" was the next member of the profession to locate in Albemarle; he was described in the colonial records as being "a man of vile character and lately condemned at Williamsburg for cursing King George and Mr. Drysdale who was Governor of Virginia."

In the year 1724 Dr. John Brickell came to North Carolina with Governor Burlington and was appointed by him to explore the interior of the state with the idea of making friends with the Cherokee Indians. It is said that he left the Albemarle section in 1730 in company with ten white men and two Indians and traveled fifteen days without seeing a human being. After this time, however, they met the Indians, who received them kindly and conducted them to their camp, where they spent two days with the Indian chief. The trip was made on horseback. Dr. Brickell later wrote a history of North Carolina (3). Another prominent physician of that day was Dr. Gable Johnson, a governor of North Carolina, who is said to have been the best of the colonial governors. It is doubtful if he ever practiced medicine, however, his time being taken up with state affairs.

Another physician of this period was Dr. William Savage, who was said to be a man of character, position, and wealth. He owned John's Island, which later belonged to Stephen Carrabus. Savage is said to have practiced about 1770 and died about 1780, which is one hundred fifteen years after North Carolina was established and one hundred ninety-five years after Sir Walter Raleigh's settlement. As a matter of fact, from this time until 1780 when the first medical school in this country was established in Philadelphia, all physicians who practiced in the colonies were either educated abroad or studied under a preceptor here in America. It is fairly certain that there were no medical schools in America before 1780, that is until aftr the Revolution. A few of the men who were prominent during this time have been mentioned previously, and at a later time we hope to be able to learn more of the others. Guion Johnson says: "If there were only 275 practicing physicians in North Carolina in 1823, there could not have been many in the province during the colonial period."

THE STATE MEDICAL SOCIETY

Soon after Jenner's announcement of his discovery of vaccination, which was in 1796, the North Carolina State Medical Society was organized in Raleigh, and its first meeting was held on April 16, 1800. This society was incorporated by the North Carolina Legislature in 1799. The society met in 1800, 1801, 1802, and 1803 and it was scheduled to hold a meeting in Chapel Hill in 1804, but no record of a Chapel Hill meeting has ever been found. The organization was comprised of the outstanding physicians of its time—men of high standards and lofty ideals who were sincerely interested in lifting the profession out of the mire of the quacks and cults, which were so prevalent at that time. Outstanding men of the period were John C. Osborn of New Bern, Mitchell of Louisburg, Fenner of Franklin, Winstead of Orange, Webb of Orange, Claiborne and Hill of Louisburg, Buchanan of Anson, Broadhead from the West, Calvin Jones, Pasteur, and Massenberg of Raleigh. All scientific contributions were of a medical nature. Papers have been recorded on the following subjects: An essay on "Cure and Symptoms of Rheumatism" by James Webb of Hillsboro; this was received by the society with warm commendation. Dr. Webb also appeared as a writer on dysentery, a subject which at the next annual meeting was assigned for competition. But the doctors of this period seemed most interested in improving the type of drugs which could be grown in this country or in this state, such as fox glove, opium, rhubarb, castor oil, and senna, and prizes were offered for the best botanical specimen delivered at the next annual meeting. The society advocated district meetings, and members were admitted through its board of censors.

Dr. Charles Smith presented himself as a candidate for admission, was examined by the censors in the presence of the society, and was admitted as a member. Dr. J. W. Long in his book on the history of the North Carolina State Medical Society thinks that this examination of Dr. Smith by the censors was in the nature of a state medical board of examiners and that the censors constituted the state board of medical examiners of the time. My own feeling is that Dr. Smith was simply passed upon by the board of censors as our county society censors pass upon its members.

At the same meeting it was resolved that the members of each district should form themselves into associations to meet at such times and places as they might think possible to confer on the means of promoting the object of the society.

There is no record of any meetings of the state medical society, from 1804 to 1849 so far as I have been able to find. Men who must have been prominent during that period were: Hill, McRae, DeRossett of Wilmington, Robinson of Fayetteville, Norcom of Edenton, Broadneck of Leaksville, Baker of Raleigh, Thomas H. Hall of Tarborough. Later all of these men were made honorary members of the present state medical society, which held its first meeting in 1850 following a medical convention held

in Raleigh in 1849 for the purpose of organizing a state medical society. At this meeting were representatives from the counties of Brunswick, Orange, Wake, Caswell, Cumberland, Edgecombe, Guilford, and Lincoln, and on April 16, 1849 the following officers were elected:

President.....Dr. Edmund Strudwick of Orange
Vice-Presidents.....Fabius J. Haywood
Chas. E. Johnson of Raleigh
James E. Williams of Caswell
Wm. G. Thomas of Edgecomb

Corresponding and Recording Secretary—
Dr. William McKee of Raleigh
Treasurer.....Dr. William G. Hill of Raleigh

Dr. James Webb of Hillsboro, then 80 years old, was made an honorary member of this society. He had been a member and officer of the society organized in 1799 and was the only person who belonged to both societies. Dr. Webb's letters are in the Archives of the library of the University of North Carolina. We have looked over some of these letters and have been unable to find anything of a medical nature. Most of them were concerned with land grants and business affairs.

Until this time medicine and surgery have been inseparable and we have had to deal with both together and, as a matter of fact, they remained closely associated during the next forty or fifty years. Gradually, however, surgery began to become independent, and the first paper that I have found recorded on any surgical condition was one on "Dry Mortification" (1), read by Dr. N. J. Pittman of Rocky Mount, North Carolina, on May 18, 1851. This paper deals with a case of gangrene of the arm in which a thrombus formed within the brachial artery. An interesting account of this paper is to be found in the transactions of the Medical Society of North Carolina, years 1849 to 1870.

Between the years of 1850 and 1861 this society met twelve times. The presidents and places are tabulated below:

In April 1849 the convention met in Raleigh. Dr. Frederick J. Hill of Brunswick was Chairman.

First meeting: April 1850, in Raleigh. Dr. Edmund Strudwick of Hillsboro, President.

Second meeting: Raleigh, May 1851. Dr. Edmund Strudwick of Hillsboro, President.

Third meeting: May 1852, Wilmington. Dr. James E. Williamson of Caswell, President.

Fourth meeting: May 1853, Fayetteville. Dr. James E. Williamson of Caswell, President.

Fifth meeting: May 1854, in Raleigh. Dr. James H. Dickson of Wilmington, President.

Sixth meeting: May 1855, Salisbury. Dr. James H. Dickson of Wilmington, President.

Seventh meeting: May 1856, Raleigh. Dr. Chas. E. Johnson of Raleigh, President.

Eighth meeting: April 1857, Edenton. Dr. Chas. E. Johnson of Raleigh, President.

Ninth meeting: May 1858, New Bern. Dr. William H. McKee of Raleigh, President.

Tenth meeting: May 1859, Statesville. Dr. Wm. H. McKee of Raleigh, President.

Eleventh Meeting: April 1860, Washington. Dr. N. J. Pittman of Tarboro, President.

Twelfth meeting: 1861 Morganton. Dr. N. J. Pittman of Tarboro, President.

The 1861 meeting was held in Morganton, on May 8th. At that meeting Dr. J. J. Summerell was elected president and the society adjourned to meet in Wilmington in 1862, but the Civil War intervened and no other meeting was held until 1866 when it met in Raleigh. During the twelve years of the life of the society, it is evident from the work of the organizers that they were actuated only by the highest ethical and scientific standards. They took under consideration the establishment of a medical school in North Carolina; they advocated autopsies; they recommended (although this did not meet with success) that the state of North Carolina pass a law requiring the registration of births, deaths, and marriages; they established in 1859, but not without much opposition from both the laity and the profession, the first board of medical examiners, which consisted of the following members:

J. H. Dickson, President
C. E. Johnson
W. H. McKee
O. F. Manson
Christopher Happoldt
J. Graham Tull
Caleb Winslow

At that time there were many quacks and charlatans as well as orthodox physicians. The organizers of the State Medical Society separated the regular physicians from the quacks and charlatans. They adopted a constitution and by-laws and the code of ethics of the National Association; they appointed delegates to the National Association and took a stand against patentees and certifiers of secret remedies; they established education and character as the basis on which to practice medicine; and they condemned contract practice.

In short it can be seen that they had vision, judgment, and wisdom, and that they not only realized the presence of existing evils but were

determined to put the medical profession of North Carolina upon the proper basis of ethics, character, and efficiency. Indeed it can be said that even though the originators of the North Carolina State Medical Society labored under great handicaps as to material conveniences and scientific methods, at the same time they had a clear insight into the current medical problems and needs. It is very clear that whatever is accomplished by the medical profession of North Carolina is due largely to the group composed of Edmund Strudwick, Fabius Haywood, Charles E. Johnson, James E. Williamson, William G. Thomas, N. J. Pittman, James H. Dickson, O. F. Manson, Caleb Winslow, and Christopher Happoldt, the organizers of the present society, and to the group who preceded them and attempted its organization in the beginning of the 19th century.

Secretary Long: Mr. President, that concludes the session.

President Strosnider: This brings the meeting to a close. We will recess until tomorrow morning at 9 o'clock.

. . . The meeting thereupon adjourned at 12:15 o'clock. . .

TESTIMONIAL DINNER

Tuesday Evening, May 4, 1937

A testimonial dinner to Dr. L. B. McBrayer was held in the Roof Garden, Robert E. Lee Hotel, Winston-Salem, North Carolina, Dr. Paul H. Ringer presiding as Toastmaster.

Toastmaster Ringer: Ladies and gentlemen, and Mr. President: It is rather a strange and paradoxical thing that whenever a group of people are gathered together for a definitely set object, somebody always has to be appointed to get up and tell them why they are there.

We all know why we are here, and still, as Toastmaster and presiding officer I am to instruct you intelligent adults as to why you have come to this Roof Garden, and why you are now sitting at this table. It sounds rather absurd.

On the other hand, I look at this gathering very much as a love-feast, as an expression of regard and respect and affection for Dr. McBrayer. The old story, you know, can never be told too often. So I think that we can repeat it here once more without fear of being considered too verbose.

This meeting is both a source of regret and of rejoicing. It is a source of regret because a secretarial relationship—and indeed far more than a secretarial relationship—is severed. It is a cause of rejoicing because it gives so many of Dr. McBrayer's friends the opportunity of meeting here together and sitting here at the dining board to show him their affection, their regard, and their respect for him.

I know of no man who has served the Medical Society of the State of North Carolina, no living man, more than Dr. McBrayer has served it. (Applause) I know of no man who has been more signally honored by the Medical Society of the State of North Carolina than has Dr. McBrayer.

A member of the Board of Medical Examiners, President of the Medical Society of the State of North Carolina, he has had the two highest offices within the gift of the Society placed in his lap.

After that, mind you, after having had those two offices—which, while fairly onerous and fairly responsible, are not to be compared with the position that he has occupied since 1921—of his own free will he undertook the most onerous job in the Medical Society of the State of North Carolina. For the last sixteen years he has filled that position to the best of his ability, and to the satisfaction of the Society.

In taking up that position, which was a position of high honor, he realized, as do all state secretaries, that on the one hand it made friends, on the other hand it made enemies. On the one hand it secured power. On the other hand it brought grave responsibilities. On the one hand, the obverse of the coin, was success, but there was a chance that if one turned over that coin and looked upon the reverse side, one might see ghastly failure. That has happened.

It did not happen in the case of this man. For the sixteen years during which he maintained this position of secretary of the Medical Society of the State of North Carolina, the Society has grown, has prospered, has increased, has become bigger and better, and I know full well that a large part of the reason for that success is due to his untiring devotion and to his never swerving loyalty. (Applause)

As I look back over Dr. McBrayer's life with which I have been acquainted now for 31 years, as a member of this Society, as a member of the Board of Medical Examiners, as President, as Superintendent of the State Tuberculosis Sanatorium, as Secretary of the Medical Society of the State of North Carolina, it seems to me that his life is very well epitomized in four lines of Tennyson's "In Memoriam":

"And thus he bore without abuse
The grand old name of gentleman,
Defamed by every charlatan,
And soiled with all ignoble use."

(Applause)

It was the purpose at this meeting to have four men speak very briefly about Dr. McBrayer. Unfortunately, this morning I had a telegram from Dr. Ernest Bullock of Wilmington, one of the speakers, as follows:

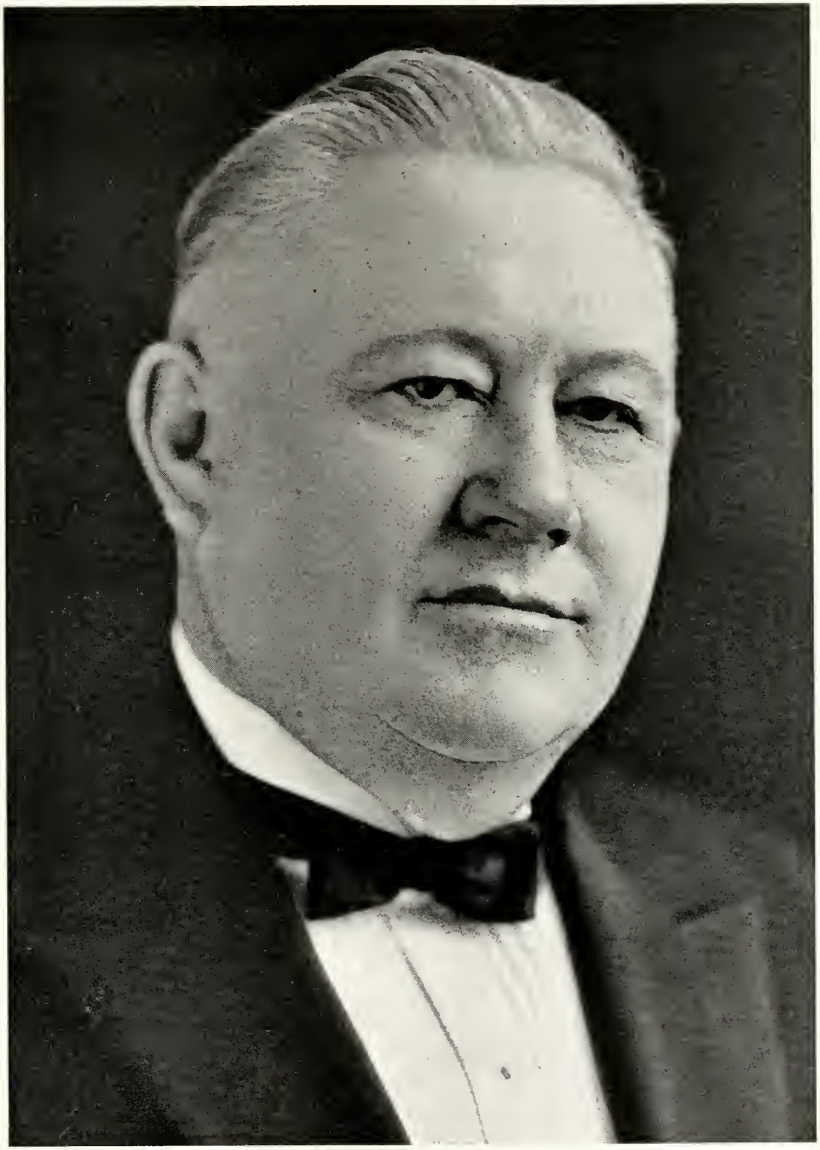
Wilmington, N. C., May 4, 1937.

Dr. L. B. McBrayer,
Robert E. Lee Hotel, Winston-Salem, N. C.:

Regret so much that an ill patient keeps me from joining you at your dinner today. I had looked forward with a great deal of pleasure to being among those who paid you the homage you have so justly earned. Congratulations and my best wishes. Many regrets.

Sincerely yours,

ERNEST S. BULLUCK.



L. B. McBrayer, M.D., F.A.C.P.

We still have three speakers left. What they will say, I do not know. I have left their words to their own judgment and to their own experience. The first speaker that I am going to call upon is Dr. Addison G. Brenizer of Charlotte.

Dr. Brenizer! (Applause)

TO DOCTOR L. B. McBRAYER

When Dr. Ringer asked me to be one of a quartette to come here to sing the praises of Dr. McBrayer, I grasped the opportunity to strike my lyre and give voice to his eulogy or to say a few spritely words in his favor, not that I was in any way capable of doing it, nor able adequately to take his measure, but because he so abundantly deserves it, and because we, therefore, delight in honoring him.

Dr. McBrayer has served the Medical Society for a long time and has always been so vigorous in doing it. My first impression of him, when he gave me my examination in Surgery, (and that was twenty-six years ago) and when I served on the Executive Committee under him, was of a man with much information, energized by a strong and robust body. I thought, "It must take considerable food to run him, and that he were lavish with his fuel, keeping the draft open."

Some people have a desire to make changes, for variety's sake if for nothing else, but if there ever were an ambitious lad, who thought of replacing Dr. McBrayer, he quietly folded his tents before lining up for combat, for he knew that he could never know and do the work anywhere near so thoroughly, and the chance of contrast bewildered him. And so it is now. We shall not be able to find one to actually replace Dr. McBrayer, but will find one who in a measure may substitute for him.

I can't believe that Dr. McBrayer is very sick. He has always looked so well! Don't you think so? But if he be sick, I invoke for him, Apollo, and Aesculapius and Panacea, and with better care of himself, a long life of well being, and comfort, and happiness!

You know, outside of the major work and intent of life, I have always liked the spritely or humorous side. I think I should like to be able to say:

If I should live to be
The last leaf upon the tree in the Spring,
Let them smile as I do now
At the old forsaken bough where I cling.

Yes, we might turn on life in a mocking spirit, much more severe than the lines of the genial Oliver Wendell Holmes, and at times we feel like doing it, when we are fed up, literally soaked to the ears. We could turn on life like the flippant chorus girl, throwing the mid-section of our body out of joint, and thumbing our nose, and saying about life, "It's all spinach; to hell with it!"

But we and Dr. McBrayer must never despair of life and happiness for, after all, with Abraham, and Jacob, and Joseph, and David, and Christ, we are all treading the Eternal Road, on to God! And may the Great Physician, our Generous Lord, lead him, as I think He will lead most physicians, up to the very Throne! (Applause)

TOASTMASTER RINGER: The next speaker whom I am going to introduce will speak in defense of Dr. McBrayer. (Laughter) He is no less a person than Dr. William H. Smith of Goldsboro.

Dr. Smith! (Applause)

DR. SMITH: Mr. Toastmaster, Dr. McBrayer, Ladies and Gentlemen of the Medical Society: Governor Aycock, a few years ago—probably fifteen or twenty years ago—made a speech in Wilson. He was introduced up there by a man named Lucas. Mr. Lucas was very flowery and laudatory in his introduction.

When Governor Aycock got up to acknowledge the introduction he said, "What my friend Lucas here has just said about me reminds me of an old maid, (laughter) who when her sweetheart came to see her at night, would dress herself up to go down in the parlor. She would sit on his lap and he would tell her that she was the most beautiful thing alive.

"When he would leave she would go back up to her room and look at herself in the mirror. She knew that he was the biggest liar in the world, but he tickled her all over." (Laughter)

I am going to say a few things of a laudatory nature about Dr. McBrayer, and I don't want to be classed with that old maid's sweetheart as one of the biggest liars in the world. (Laughter)

What I am going to say I am going to say honestly, in contradistinction to the old maid's sweetheart, because I can say it honestly. But I do want to be classed with that old maid's sweetheart in one respect, and that is that he was a great lover, and I am a great lover—of Dr. McBrayer.

I am a lover of Dr. McBrayer for two reasons. One is because of the personal kindnesses and things that he has done for me, individually and personally. With these things, of course, you all are not concerned. But of greater import to me even, and particularly to the medical men of the state, are the things that he has done for us as medical men.

I know a little bit about the inner workings of the State Society, of questions that have come up before the men who run the State Society, and I know that Dr. McBrayer has always had the interests of the medical men of the state at heart.

I remember three or four years ago when a committee from the State Hospital Association and the State Medical Society were meeting and trying to formulate plans for this Hospital Savings Association. Of course both committees were composed largely of doctors. They got enthusiastic about the Hospital Savings Association and wanted to do things that would benefit the Hospital Savings Association. They lost sight of the fact

that we might be doing things to injure the medical profession of the state.

Dr. McBrayer did not lose sight of that. He fought for the medical men of the state, and did not fear the proponents of the plan that was being put forward.

Mr. Toastmaster, when I had a letter telling me of this dinner, it struck a responsive chord in my heart, and made me glad that I was a member of a profession which could and did recognize worthiness in a man, and would show that appreciation of the man by having a dinner like this.

If you hadn't asked me to say something I think I would have been like an old man, a patient of mine several years ago, who loved his toddy. Unfortunately he was living with one of his children who was a staunch prohibitionist, and the old man had a hard time about it. (Laughter)

In addition to that, he lost all of his teeth and he had some artificial dentures that didn't fit very well. He brought all of this down to the office one morning when he came to see me. After I had examined him and started giving him some directions, he said, "Now, doctor, mmh, there is one thing I want to ask you about."

I said, "All right, sir, what is it?"

He said, "Mmmh, would it, mmh, hurt me, mmh, mmh, to take just a leetel bit of toddy before meals?"

I said, "No, sir. I think that will do you good."

He said, "Well, mmh, mmh, I am mighty glad to hear you say that, because I was going to do it anyway." (Laughter)

So, Mr. Toastmaster, if you hadn't asked me to say something tonight I think I would have done it anyway. (Laughter)

Toastmaster Ringer: Dr. McBrayer, you can see very readily that you are on trial, and I fear very greatly that your guilt may be proven. But still, have faith. We have one more attorney for the defense that I am going to call upon now, Dr. G. G. Dixon of Ayden, who will make the closing speech for the defense. (Laughter and applause)

Dr. G. G. Dixon: Mr. President, and Mr. Toastmaster, Dr. McBrayer and Ladies and Gentlemen: I am in a "picklement" proper. When I first began to attend banquets, I would look up at the speakers' table and envy those at that table. I have always looked forward to the time when I might sit at a speakers' table. (Laughter) God help us! Never again! (Laughter)

Last night, after hearing Carl Reynolds undertake to introduce Dr. Rosenau and forget his speech (laughter) I went back to my room and reduced mine to writing. (Laughter) That is not the worst of it. (Laughter) It is so darn dark, I can't read it, (laughter) and I am so nervous I can't stand up. (Laughter)

When I was asked to appear on this program I wondered what in the world he did it for. I wonder still more now. The only thing that made me accept it was my love for Dr. McBrayer.

There are so many more men—gosh, there go my "specs"—that would be so much more efficient than I am. If I had the vocabulary of a Cy Thompson, or maybe the wit of a Laughinghouse, or the adjectives of J. K. Hall, even then I wouldn't be able to express my admiration for Dr. McBrayer, in words.

Dr. McBrayer was president of the Society the year that my license to practice medicine was granted. After that, I understand that he was allowed to go out of harness for a few years, but still kept in touch with the work by serving effectively and efficiently on most of the important committees of the Medical Society.

My first knowledge of him in person came in 1921, at the Pinehurst meeting. There was some discussion in the House of Delegates—I don't remember what, and don't remember the results, but I do remember that I happened to be on one side of the fence and Dr. McBrayer on the other.

He was an antagonist worthy of one's steel, but he was fair, honest and honorable, and from that day till this, I have loved him.

Now, if I could see what I have written down here from there on, I could finish this speech. (Laughter)

But he was made Secretary at that particular time. He had won his laurels.

Most men who have served before and after him as president of the Society have retired on their laurels, and allowed the Society to carry on as best it could. But not Dr. McBrayer! He has brushed his aside, picked up the work, and has gone on and on and on, leading the Medical Society, literally picking it up by its bootstraps. And, from an organization that existed for mere scientific purposes to an organization that exists for more scientific purposes, and also serves every member of the Society in every way possible, Dr. McBrayer has made the Medical Society what it is today.

I believe they say every man who makes a speech has to tell a story, don't they? I don't know any stories, but I will say this: His oneness of purpose reminds me of a schoolboy who was in high school with me.

Back in my younger days every high school had its little debating society. We had one very bright chap in this society who had one pet phrase. No matter what subject was assigned him to debate, nor which side of the subject he was assigned to debate on, he always ended his speech, with a flourish: "In the immortal words of Patrick Henry, I declare unto you, 'Give me liberty or give me death.' "

We had a program committee which decided that it must be possible in some way to find a subject where he couldn't use that expression, or that phrase. So, after long deliberation, they hit upon the subject, "Resolved: That horse colic is necessarily fatal," (laughter) and assigned him the

affirmative, (laughter) thinking it would be impossible for him to use his phrase. (Laughter)

The time for the debate came. He gave a wonderful discourse which had been obtained from a veterinarian in the community, but wound up with his speech thusly: "Ladies and Gentlemen, Honorable Judges, I declare unto you, that horse colic is nothing more nor less than a bag of wind, tied up in the bowels of the horse, crying out in the immortal words of Patrick Henry, 'Give me liberty or give me death.'" (Laughter and applause)

Anyhow, Dr. McBrayer has gone forward, has striven upward and onward. I have heard his praises sung to the sky by those men who loved him, honored and respected him. I have heard him maligned by those who were on the other side. But none of it seemed to affect him. He went on in his fat, happy, genial way.

He seems to me, if you will allow me to paraphrase a little bit, to be a man who can risk all of his winnings on one turn of pitch or toss, and lose, and start again at the beginning, and never breathe one word of his loss.

He has forced his heart, his nerves and sinews to do their turn long after they were gone, when there was nothing left within him, except the will which says to them, "Hold on."

He has walked with crowds and kept his virtue, talked with kings, nor lost the common touch. All men have counted with him, but none too much.

That went off, didn't it? (Laughter)

"Mac," it is with reluctance, lots of it, that I see you—we see you—hand the banner to someone else, to carry on. I do not believe there is a single man in this whole Society who has the ability, the inclination, the determination, the time, and the energy to carry this Society on and upward, continuing it as the great Society it is today, and making it a greater Society for the future, which we must have.

Although we do not expect all of your life to be given entirely to this Society, we are going to expect you, so long as you live, to have a hand in its affairs, helping to guide and direct it on to greater and more glorious things. And when that summons comes, to join that innumerable caravan, you may rest assured that this organization will be a living monument to you and the work that you have done.

I know of no more fitting closing than the prayer to Allah, so, "Mac,"

"I pray the prayer the Easterners do,
May the peace of Allah abide with you;
Wherever you stay, wherever you go,
May the beautiful palms of Allah grow;
Through days of labor, and nights of rest,
The love of good Allah make you blest;
So I touch my heart—as the Easterners do,
May the peace of Allah abide with you."

(Applause)

TOASTMASTER RINGER: "Mac," your case looks black indeed. (Laughter)

We have rather reversed the ordinary course of procedure in a court of law, because this is not a court of law. We have heard the defense first.

But now we come to the prosecution, and I am going to call upon Dr. William Coppridge of Durham to head the prosecution.

Dr. Coppridge! (Applause)

Dr. Coppridge: Mr. Toastmaster, Ladies and Gentlemen: It is my pleasant privilege, on behalf of the Medical Society of the State of North Carolina, to thank Dr. McBrayer for his long years of service to the Society. He has served us long and well, and I wish to say to him that we are very grateful.

From 1917 to 1937 is a long time, more than half the span of the average professional life. During all these years, Dr. McBrayer has guided the destinies of organized medicine in North Carolina.

I would like to read a list of the presidents of this Society under whom Dr. McBrayer has served:

Dr. Cyrus Thompson
Dr. Carl V. Reynolds
Dr. Thomas E. Anderson
Dr. H. A. Royster
Dr. J. W. Long
Dr. J. V. McGougan
Dr. Albert Anderson
Dr. William deB. MacNider
Dr. John Q. Myers
Dr. John T. Burrus
Dr. Thurman D. Kitchin
Dr. L. A. Crowell
Dr. J. G. Murphy
Dr. M. L. Stevens
Dr. John B. Wright
Dr. I. H. Manning
Dr. Paul P. McCain
Dr. Paul H. Ringer
Dr. C. F. Strosnider

I am sure that we all envy Dr. McBrayer his long association with such a group of men as this.

Dr. McBrayer, on behalf of the members of the Medical Society of the State of North Carolina, we wish to present you with a little gift. We know that it is small in comparison to the service you have rendered. We want you to know that every doctor in this state of North Carolina wishes you many years of good health and happiness. (Applause)

. . . There were calls for "Speech". . .

. . . The members arose and applauded as Dr. McBrayer arose. . .

SECRETARY-TREASURER EMERITUS MCBRAYER: I wish I had the gift of oratory like Dr. Grady Dixon, the gift of directing an audience like this in the way that it was desired to go, like Dr. Ringer, the ability to express sweetness and love and devotion like Dr. Smith, and the eloquence and wit of the distinguished gentleman from Charlotte. I would bring it all and lay it at your feet.

This is a peculiar situation for me. Perhaps more than any other one thing, certainly more than very many things in my life, I have enjoyed my labors for the Medical Society of the State of North Carolina and my association with its members. If I have rendered any service, I am glad. If I have hurt anyone's feelings in the exuberance of energy, I am sorry.

Perhaps I don't deserve one-half of the good sweet things that have been said about me tonight, but I appreciate them just the same as if they were absolutely true.

I have no idea whatever of resting upon my laurels so far as the Society is concerned. I expect always to attend the meetings, so long as I live. I also expect to be at the service of any of the committees, or any of the officers, now and in the future, where I can render service for the benefit of the profession.

And so, tonight, Mr. Chairman, in closing, I want to say, God Bless you, Au Revoir, but not good-bye! (Applause)

TOASTMASTER RINGER: Dr. McBrayer, your official connection with the Medical Society of the State of North Carolina may be terminated, but your influence upon it can never be terminated, any more than can the deep love and affection which you hold in the hearts of all of us.

We are now adjourned.

PHYSICIANS PAY HONOR TO RETIRING SECRETARY

TESTIMONIAL DINNER HELD BY STATE SOCIETY FOR DR. MCBRAYER

In a day devoted to section meetings, organization meeting of the general practitioners, testimonial dinner to Dr. L. B. McBrayer, and the president's reception, followed by the annual ball, members of the Medical Society of the State of North Carolina, passed the second day of their 84th annual convention, now in session at the Robert E. Lee Hotel.

The highlight was the testimonial dinner to Dr. L. B. McBrayer, Southern Pines, veteran member of the society who for 21 years held the responsible position of secretary-treasurer for the state organization. Due to ill health he was forced to resign last April.

As a token of their appreciation for his years of service, the members of the society presented to their erstwhile secretary-treasurer a silver

serving set at the conclusion of four laudatory addresses made by friends of the honored guest.

Those speaking were Dr. Addison G. Brenizer of Charlotte; Dr. Wm. H. Smith of Goldsboro; Dr. Grady G. Dixon of Ayden and Dr. W. M. Coppridge of Durham who made the presentation of the gift.

Dr. Paul H. Ringer of Asheville, served as toastmaster, and pointed out in his introductory remarks the important roles Dr. McBrayer had played in the State Medical Society, both as an official and as a committeeman.

"I have no idea of resting on my laurels so far as the society is concerned," he said in response to the honor that had been shown him. "I intend to continue to serve the medical society wherever I can."

—*Journal-Sentinel,* Winston-Salem, N. C.

DOCTORS HAVE FLOWERS FOR THE LIVING

Doctor L. B. McBrayer, whose service to the medical profession in this State in 21 years as secretary of the Medical Society of the State of North Carolina and otherwise has been prodigious, is fittingly honored with a testimonial dinner at which doctors of the State pay tribute to his fine service and high usefulness. Recently he retired as Secretary because of ill health.

Doctor McBrayer has been a mighty force for good not only in medicine but otherwise in this State; his retirement means in nowise the end or even the diminution of that force and influence, for Doctor McBrayer made clear in replying to the glowing tributes paid him that he has no idea of resting upon his laurels so far as medicine is concerned. He is not one to remove his boots, whatever befalls—and that is another reason why he is beloved by men wherever he goes.

—*Charlotte Observer*

TESTIMONIAL TO DR. McBRAYER

The Daily News would like to join in the echoes of applause for a friend of many years, Doctor L. B. McBrayer, whose honors from the Medical Society were symbolized the other evening by a testimonial dinner and the presentation of a silver serving set, observance incident to his retirement after 21 years in the position of secretary-treasurer of the society. As general practitioner in private practice, as specialist, as a member of the official sanitary forces of the state, and as officer of liaison between the profession's organization and the public, Doctor McBrayer has given constantly of his best. We trust that the ill-health which has forced his retirement may be but temporary. Amongst his numerous fine endowments from nature were superb health and strength, and it is strange to think of weakness or sickness in association with him, except the weakness and sickness of others.

Through the decades of his career, the major labor of the medical profession, in prophylaxis and as described impersonally to all the people, has been a warfare against tuberculosis. There have been no finer, more unflagging zeal and enthusiasm brought into this long hard conflict than L. B. McBrayer's.

—*Greensboro Daily News*

HONORING DOCTOR McBRAYER

In honoring Doctor L. B. McBrayer, the Medical Society of the State of North Carolina calls to the fore the impressive fight which has been made against tuberculosis in North Carolina within the memory of the average citizen.

Doctor McBrayer, as an outstanding leader in that fight, has rendered a service of inestimable value to the entire state. For years he has worked as a physician, as an official of the tuberculosis association, and as an institutional head, in combatting the ravages of the Great White Plague and in directing the attention of the public to the symptoms and the ever-present menace of the malady.

The world, which has erected many monuments to warriors who have excelled in the art of killing their fellows, to poets who have sung beautiful lyrics on vague or impassioned themes, and to statesmen who have ruled or ruined, has been exceedingly stingy in its acknowledgment of debt to the quiet but highly effective servants of mankind who move from bedside to bedside or work in laboratories or classrooms. But on many sides evidence is accumulating to show an increasing awareness and appreciation of the work and worth of men like Doctor McBrayer, who pioneer in causes which tend to save life rather than to take it and thereby add light and life to the song of the poet and make healthier and happier the nations over which the great statesmen rule.

—*Winston-Salem Journal-Sentinel.*

HONORING DOCTOR McBRAYER

(From the State Press)

The people of the state who are in any wise personally or professionally acquainted with Doctor L. B. McBrayer will join in and applaud the spirit of his fellow-practitioners in tendering him a testimonial dinner in appreciation of his long and faithful services as secretary-treasurer of the Medical Society of the State of North Carolina.

Doctor McBrayer has served his profession and the public in an effectual and memorable manner, having held numerous commissions of responsibility in both relations and always coming through with such duties in honorable and efficient fashion.

It was Doctor McBrayer who headed up the sentiment in North Carolina in the fight against tuberculosis which has so successfully been carried forward in this State for two decades.

And it is Doctor McBrayer who yet stands shoulder to shoulder with his distinguished son-in-law, Doctor Paul P. McCain, superintendent of the State Sanatorium and who is the commander-in-chief of all the forces in North Carolina fighting to eradicate the white plague.

His fellow-doctors have given this veteran physician and public servant the honor which was his due and it will be generally hoped throughout the State that the ill-health which leads Doctor McBrayer to resign his major activities will be only of a transient nature.

—*Charlotte Observer*

SECOND GENERAL SESSION

WEDNESDAY, MAY 5, 1937

The Second General Session convened at nine-twenty-five o'clock, President Strosnider presiding.

PRESIDENT STROSNIDER: The session will come to order and I will ask the Secretary to read the title of the first paper.

SECRETARY LONG: The first paper of the morning is by Dr. C. D. Thomas and Dr. J. S. Denholm, of Sanatorium, on, "The Use of the Fluoroscope in the Diagnosis of Pulmonary Tuberculosis," from the Section on the Practice of Medicine.

. . . Dr. Thomas presented this paper, illustrating with slides, about which he commented as follows:

THE USE OF THE FLUOROSCOPE IN THE DIAGNOSIS OF TUBERCULOSIS

DRS. C. D. THOMAS AND J. S. DENHOLM, Sanatorium, N. C.

(From Section on Practice of Medicine)

The diagnosis of tuberculosis in its early stages has been a problem of deep concern for a long time. Even though wide spread dissemination of information concerning the disease has been made available to the public by the Early Diagnosis Campaigns, the admissions to Sanatoria still show that over half of the victims are in the far advanced stages of the disease before treatment is begun. In a recent report[1] on the admissions to 794 sanatoria throughout the United States during the year 1934, this was forcefully emphasized. Of 66,861 patients admitted 57.3% were classified as far advanced, 29.7% as moderately advanced and only 13% as minimal cases.

Tuberculosis is an insidious disease and only after it is well advanced does it present the classical symptoms with which you are so familiar, and by this time the patient's hope of complete recovery has been markedly reduced. Of the patients admitted to the North Carolina Sanatorium prior to 1927[2], classified as minimal tuberculosis 86% of these are found to be

alive and working after an interval of one to thirteen years. Of those whose classification was rated as moderately advanced only 44% were similarly situated after the same time interval. While of those cases whose original classification showed the disease to be far advanced but 13% were still alive and self supporting. Thus the dire need of some relatively simple method for increasing our ability to make early diagnoses is strikingly apparent.

Most minimal cases and many moderately advanced cases will present no symptoms whatever, and if any should be present they will be in all probability so slight that the patient will not experience sufficient concern as to the seriousness of his condition to warrant an early visit to his physician; easily explaining away his symptoms as due to some more obvious cause. Thus frequently the patient is in the well advanced stages of his disease before seeking a doctor for advice.

When a patient presents himself for examination we are frequently misled in that chest examination does not reveal abnormal physical findings. Most minimal, many moderately advanced and occasionally even far advanced cases do not present abnormal physical findings. Even when suggestive symptoms and physical signs are elicited and the laboratory is sought for confirmation we can still be misled by a sputum report negative for acid fast organisms.

It has been shown that a concentration of at least 100,000 organisms per cc of sputum is necessary before tubercle bacilli may be demonstrated by the customary Ziehl-Nielson[3] staining technique as used in most laboratories.

A positive tuberculin reaction in itself is significant only of the presence of infection with the tubercle bacillus, but is no criterion upon which the presence of clinical tuberculosis may be judged. A negative tuberculin reaction[4] precludes the presence of infection with the tubercle bacillus and hence rules out existing clinical disease except in very ill patients and those running a very high fever, in which case hypersensitivity to the specific protein may be lost.

Roentgenological examination of the chest is the most accurate method of demonstrating pathological changes in the lungs. Not only does it demonstrate the presence or absence of disease but also shows the extent of involvement and with a considerable degree of accuracy suggests the activity of the lesions. Such examination, however, is expensive and hence is impractical for routine follow up on all patients showing positive tuberculin reactions. We have attempted to substitute fluoroscopic examination for the permanent X-ray record as a means of diagnosis nearly comparable to the latter in efficiency as well as being vastly less expensive.

In those cases where the fluoroscopic findings are negative, no further examination is usually advised. However, where either definite or suspiciously pathological shadows are revealed on the fluoroscopic screen, roentgenograms we feel are indicated.

Prior to three years ago such a substitution could not have been made without a marked impairment in efficiency of diagnosis. However, with the development of the zinc sulphide[5] fluoroscopic screen along with a fine focus X-ray tube we feel that this method of examination has been improved in efficiency to a point where clinical disease can be ruled out but the exact nature of abnormal densities cannot always be determined.

This difference in efficiency is in the greater difficulty with which minimal chest lesions are demonstrated by the fluoroscope in comparison with the relative ease with which such early disease may be visualized by the roentgenogram. Moderately advanced and far advanced parenchymal lesions are almost equally well demonstrated by both methods. In demonstrating the presence of the so-called primary focus and tuberculous tracheo-bronchial node as a criterion upon which to make a diagnosis of childhood type tuberculosis it has again been our experience that the fluoroscope is less efficient than the roentgenogram.

For the past fifteen years all patients registered at the out-patients clinic of the North Carolina Sanatorium have in addition to a thorough physical examination been examined with the fluoroscope. It has become an almost daily occurrence among our clinic staff since fluoroscopic examination became routine, to uncover tuberculosis among patients where physical findings were negative and roentgenograms prohibitive for financial reasons. It has been possible to extend this same service to our traveling clinics during the past eighteen months.

At our suggestion we had developed for us a portable fluoroscope. This machine weighs only 200 pounds, may be dissembled and reassembled in but a few minutes and is easily transported in the back of an automobile. It is equipped with a hood which fits about the eyes permitting its operation without a dark room. It operates on 110 volt, 60 cycle, alternating current which is available in most communities.

. . . Interpolation. . .

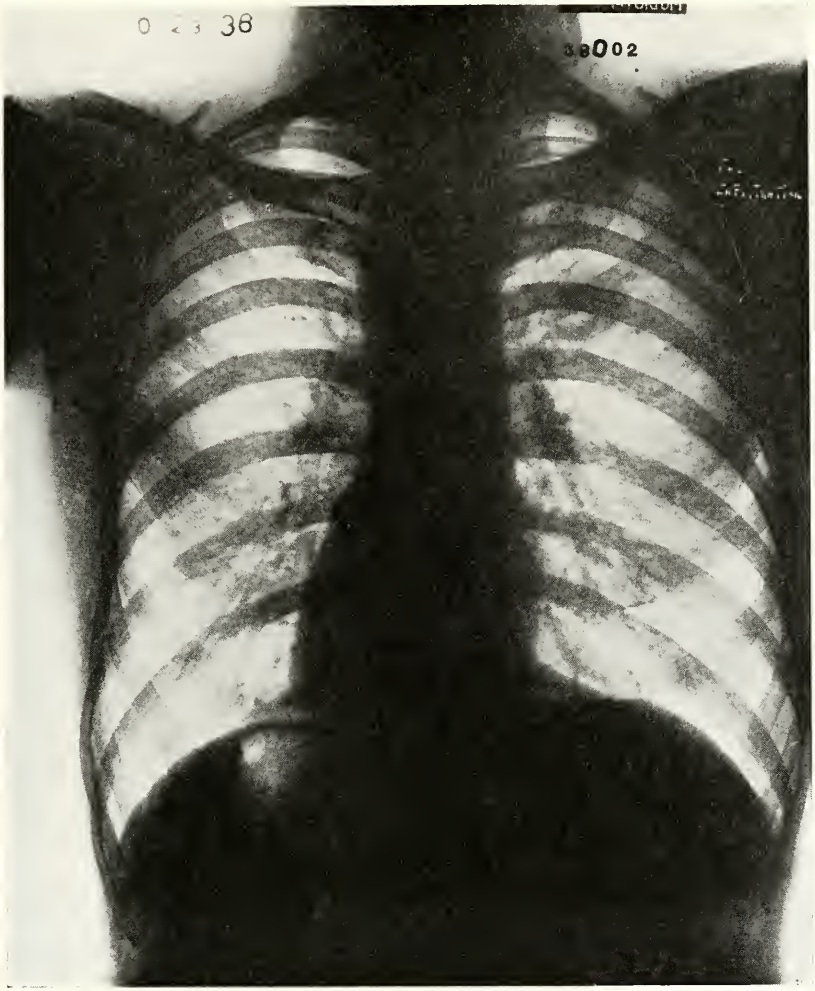
The following slides illustrate some of the very minimal lesions which were originally visualized by this machine and diagnosis subsequently corroborated by. roentgenogram.

Case I. J. L.—Mill worker. Cough and expectoration for two months, hemoptysis 1 oz., some tiring, no physical signs. Examination for diagnosis.

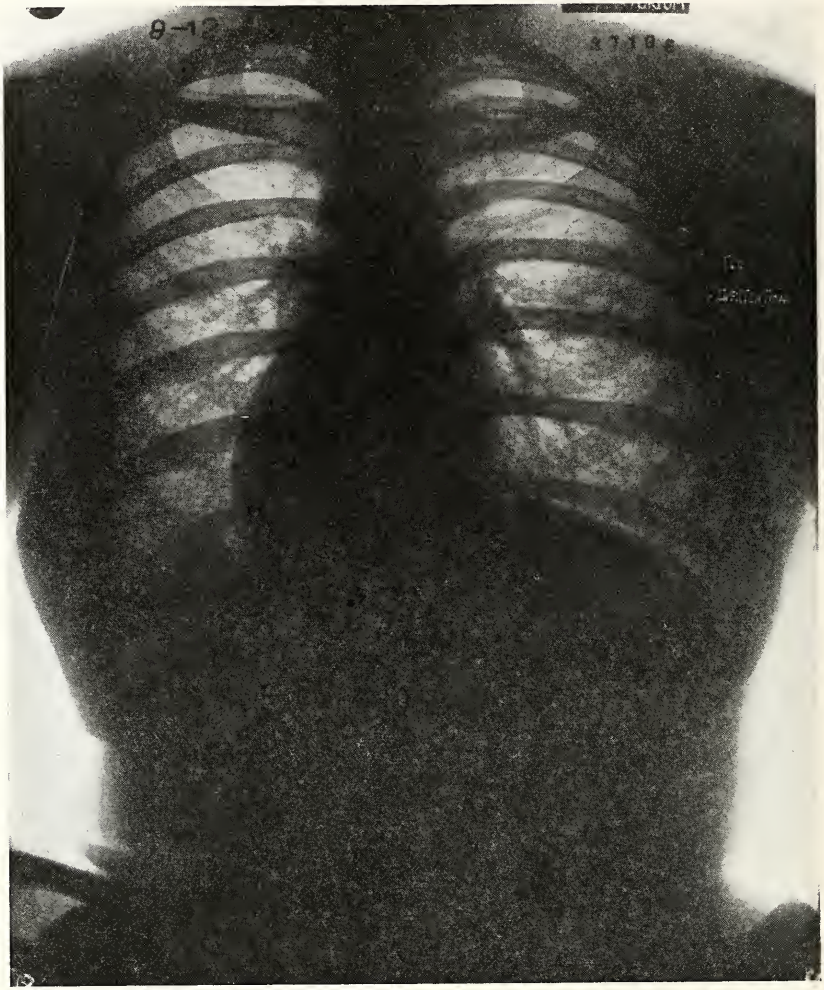
Case II. M. B.—Nurse. Nursing tuberculosis patient for eighteen months. Examination precautionary.

Case III. P. S.—Housewife. Husband died of tuberculosis September 1936, no symptoms, no physical signs. Examination precautionary.

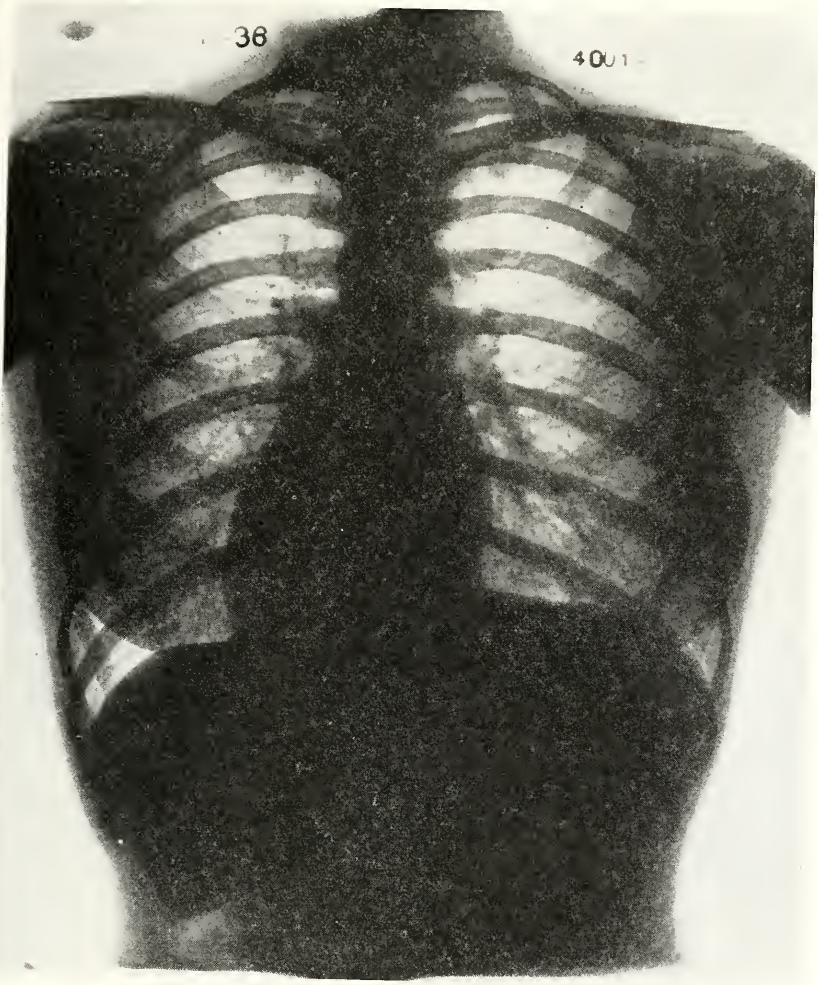
Case IV. H. G.—Housewife. Husband ill with tuberculosis for two years. Cough for four months, no physical signs. Examination precautionary.



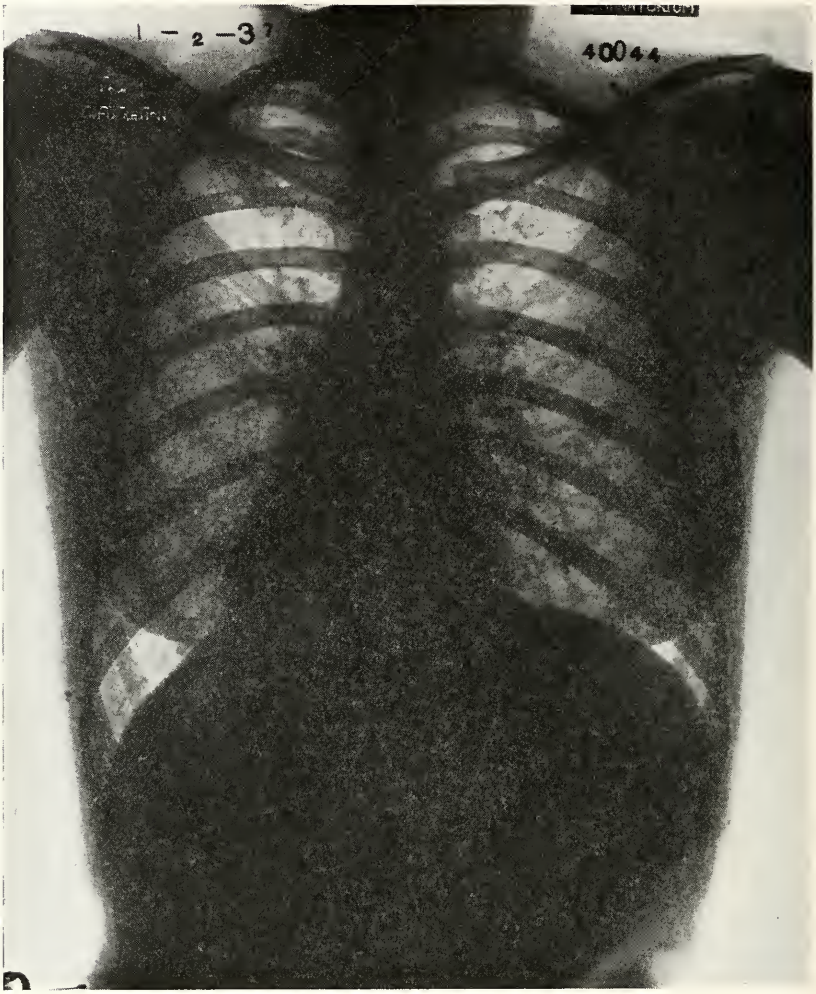
Case I, J. L.



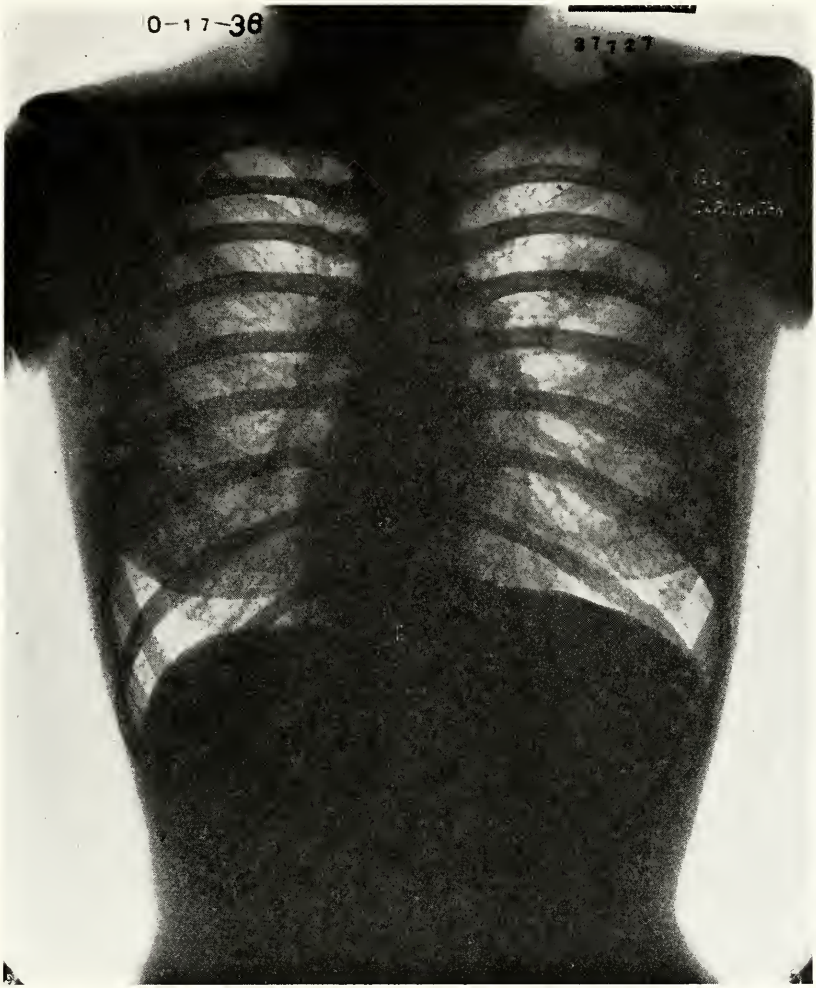
Case II



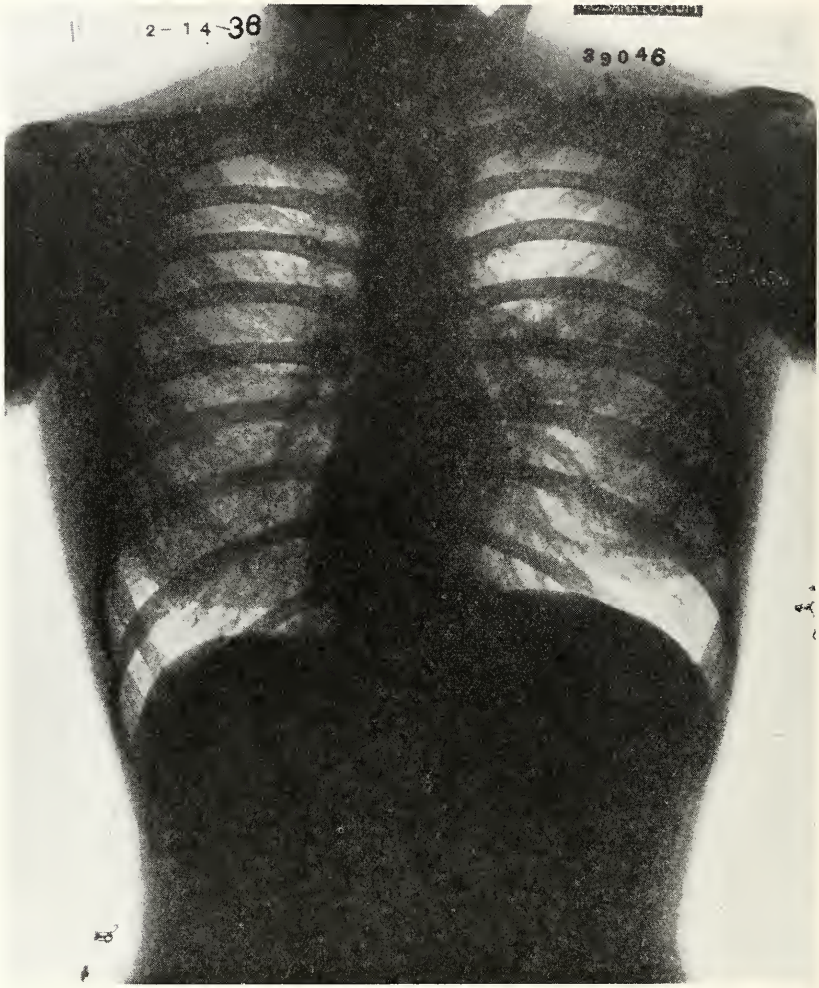
Case III, P. S.



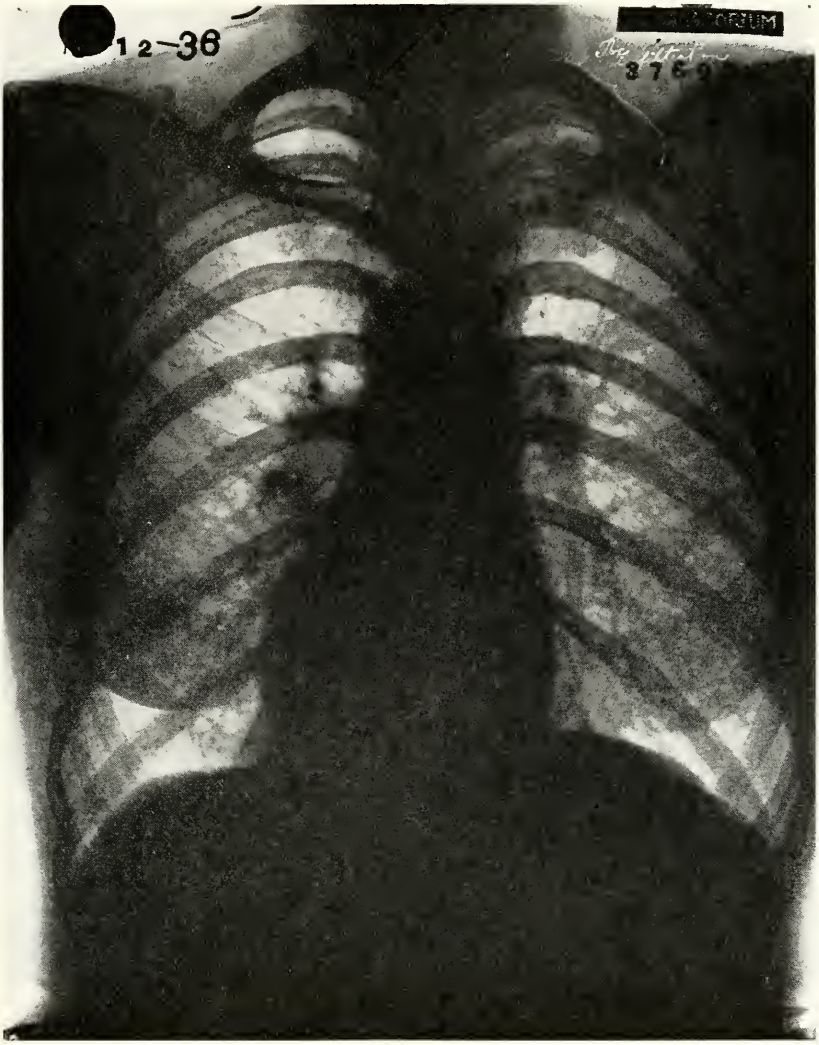
Case IV, H. G.



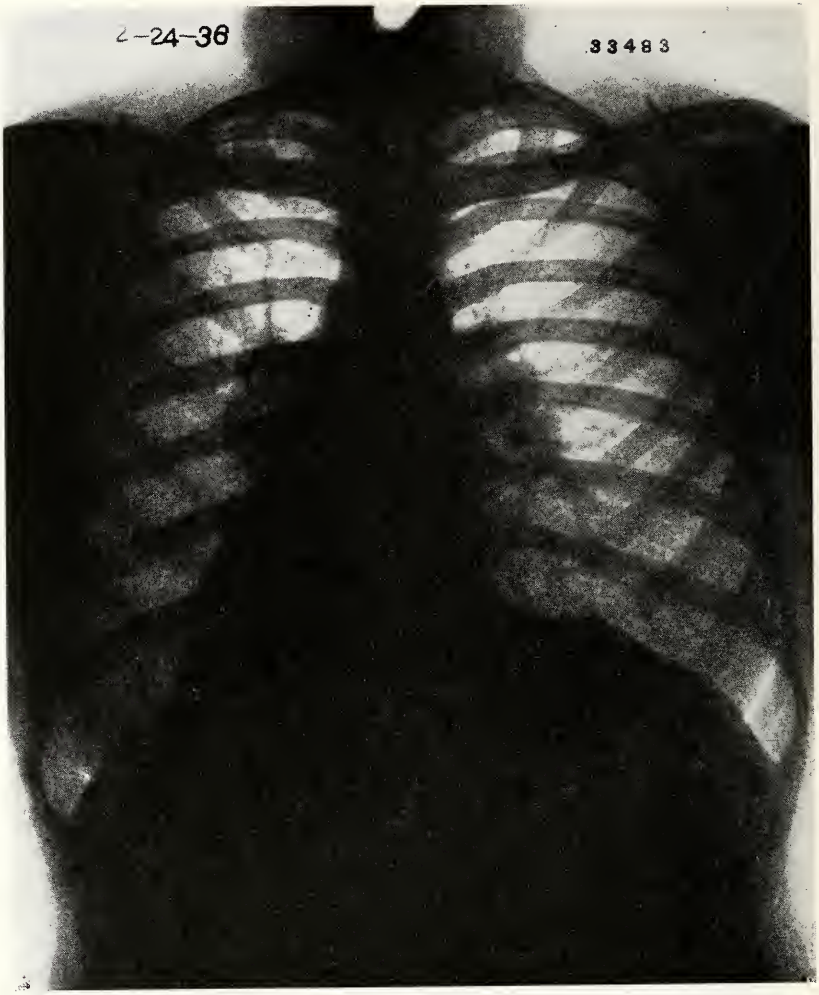
Case V, N. H., No. 1



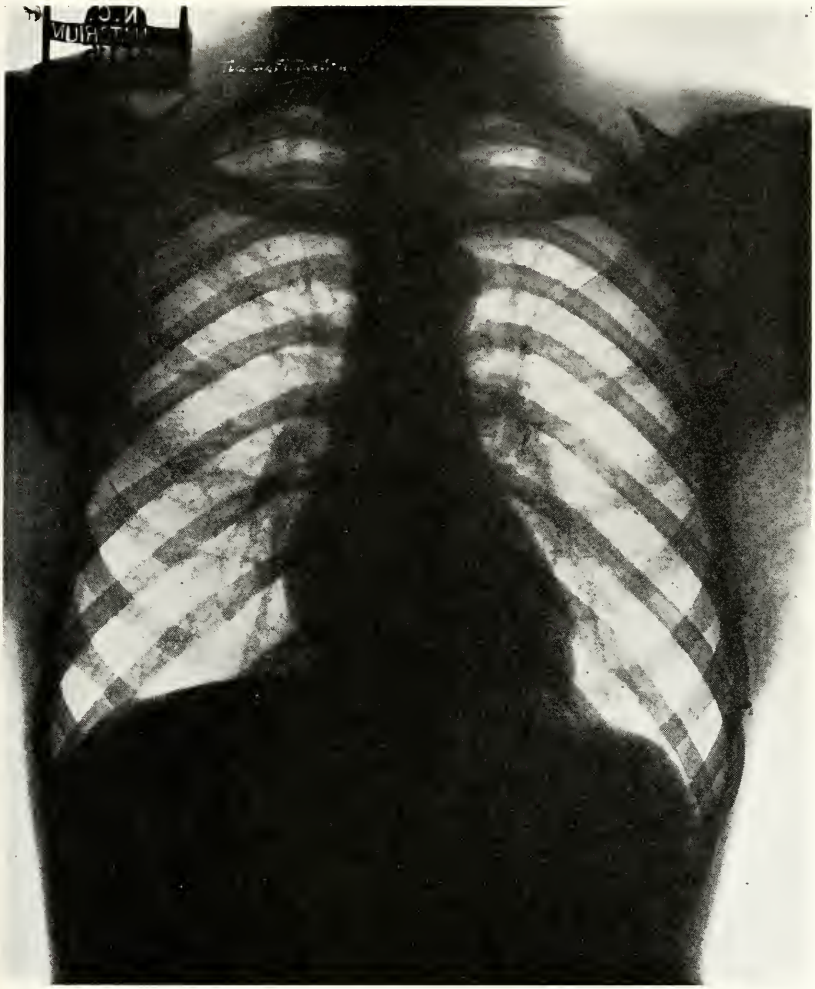
Case V, N. H., No. 2



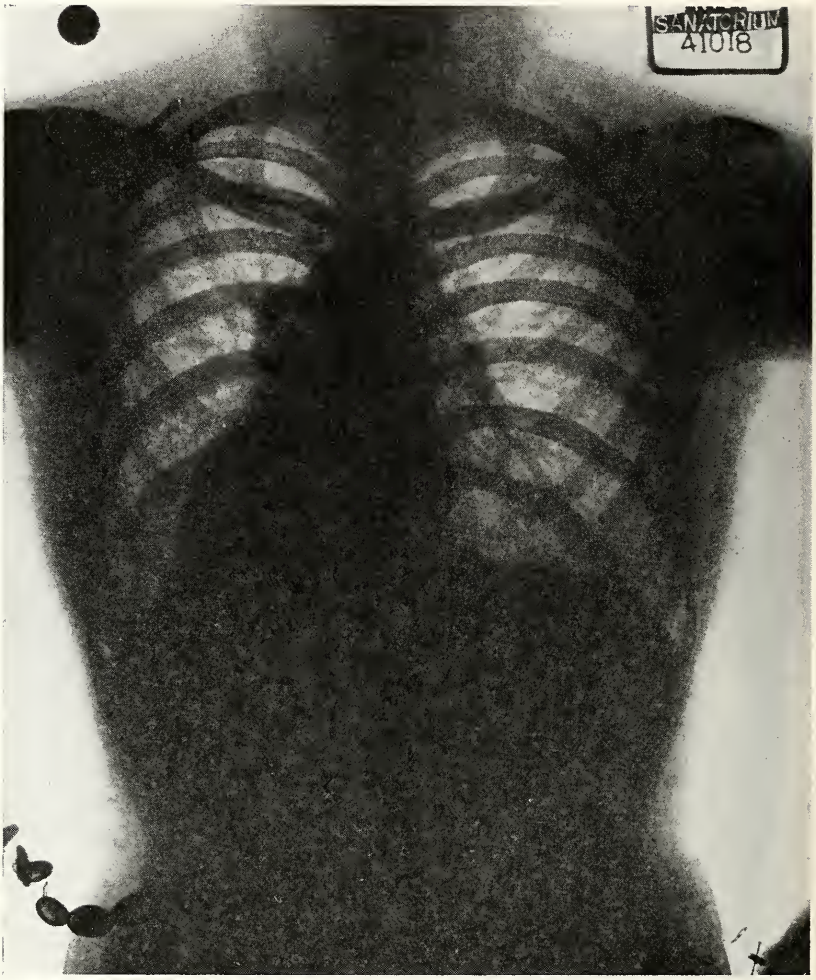
Case VI, D. L.



Case VIII, L. M.

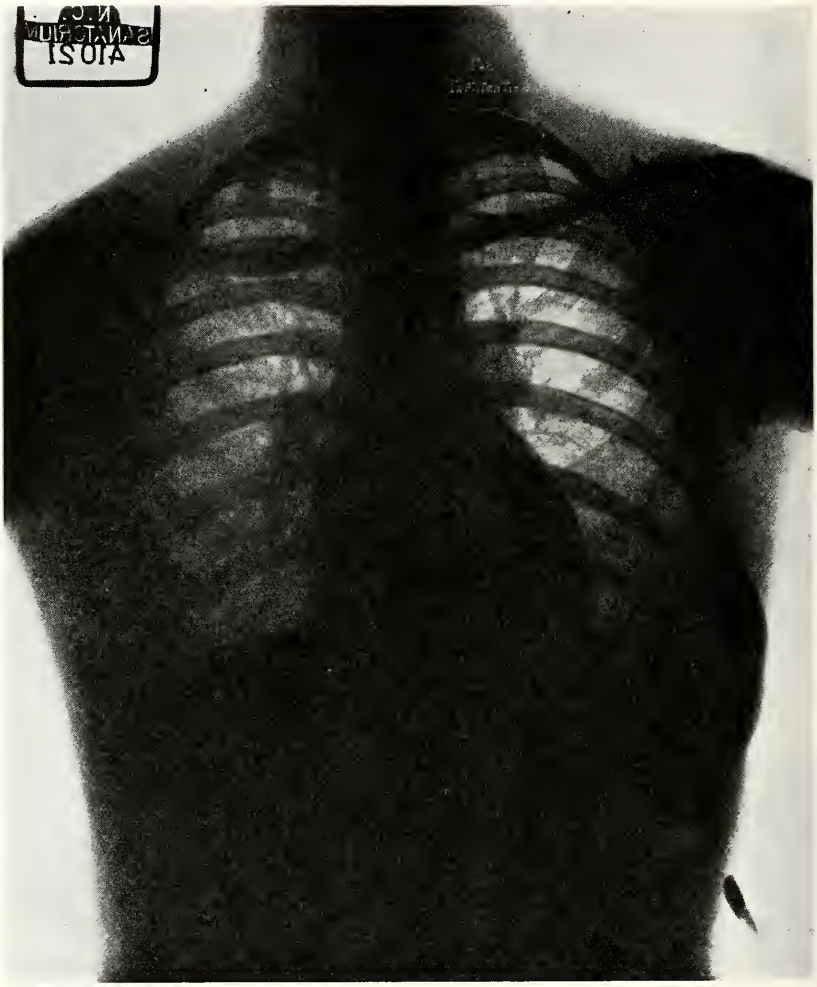


Slide IX



Slide X

Slide XI



Slide XII

Case V. N. H.—School teacher. Father died of tuberculosis 1935. Brother became ill in 1936. No symptoms, no physical signs. Examination precautionary. Did not follow treatment advised.

Slide 2. Developed slight cough, malaise. Examination repeated—lesion definitely more extensive.

Case VI. D. L.—Colored cook. Employer's daughter showed positive tuberculin reaction. Examination of all possible contacts in home advised. No symptoms, no physical signs.

Case VIII. L. M.—colored maid at Sanatorium. No symptoms, no physical signs. Routine examination of employees. Caseous tracheobronchial nodes.

In the course of our routine studies of college students, we administered the Mantoux, or intradermal tuberculin test, to the entire student bodies of two North Carolina colored universities, injecting in each case 0.1 cc of 1:1000 dilution of Koch's Old Tuberculin as is shown on chart No. 1.

RESULTS OF 698 TUBERCULIN TESTS

Number tuberculin tested	698
Number positive reactors	335
Percentage of positive reactors	48
Number of roentgenograms	228
Number fluoroscopic and roentgenograms	297

A total of 698 tests were made, of whom 363 failed to show any reaction to the tuberculin test. These were excluded from further examination as being non-tuberculous. 335 or approximately 48% showed positive reactions and it was our intention that all of these should be examined further by both fluoroscopy and by roentgenogram. However, for one reason or another only 297 were examined by both methods.

Chart II shows the results of these examinations. Two students show by their roentgenograms very small adult type lesions which were not considered to be clinical disease and for whom no treatment was advised, other than general observation and further roentgenological examination after an interval of three months. These small lesions were not visualized with the fluoroscope and were reported as probably negative for tuberculosis after this type of examination. (Interpolation) Eighteen students who were likewise reported as probably negative from the fluoroscope were found on the roentgenogram to have childhood type tuberculous lesions. Seventeen of these presented very small and well calcified lesions which were not considered of any clinical significance. In the remaining patient the tracheobronchial lymph nodes were apparently not well healed and this student was advised to limit her activities somewhat and remain under observation and have further examination in three months. Twenty-five patients were diagnosed as having childhood type lesions by use of the fluoroscope and these diagnoses were corroborated by roentgenogram. In two of these cases the tracheobronchial glands were likewise not well healed and further observation was advised.

(Interpolation) Eight students were diagnosed as "suspicious of tuberculosis" by the fluoroscope, but these findings were not corroborated by the roentgenogram. 244 students were diagnosed as negative by both methods of examination.

COMPARISON OF RESULTS OF 297 ROENTGENOLOGICAL AND FLUOROSCOPIC EXAMINATIONS

	Number Examinations	Number Adult Tuberculosis	Number Childhood Tuberculosis	Number Suspicious	Number Negative
Roentgenograms	297	2	43	0	252
Fluoroscopic Examinations	297	0	25	8	244

Though there is some discrepancy between the fluoroscopic and roentgenographic findings, the diagnosis by both methods coincide exactly in all but twenty cases or rather were identical in 94% of the cases examined. However, seventeen of these presented very small childhood type lesions which could not be considered of any great clinical significance. The remaining three cases showed very slight changes and it is doubtful that they would have ever developed into clinical disease.

The fluoroscope is not a perfect method of examination, but it comes nearer to the roentgenogram than any other yet devised. It can be used in conjunction with our usual methods of examination and eliminate many unnecessary and expensive roentgenograms. It can also be used to examine groups of contacts and positive tuberculin reactors, advising roentgenograms in those who present definite or suspicious densities, thereby greatly reducing the cost of the examination and at the same time finding many early cases of tuberculosis long before they are ill and have definite symptoms.

CONCLUSIONS

1. The diagnosis of tuberculosis in its minimal stages by case history, physical examination and laboratory findings is frequently misleading and unreliable.

2. We believe the roentgenogram to be the most efficient method of diagnosis of such cases.

3. In moderately advanced tuberculosis where physical examination and laboratory findings offer no assistance the fluoroscope presents a method whose efficiency is almost equal to that of the roentgenogram.

4. In studying groups of positive tuberculin reactors the fluoroscope represents an inexpensive method of diagnosis highly favorable in comparison to the efficiency of roentgenogram.

REFERENCES

(1) J. A. M. A., Vol. 105, No. 23, P. 1866, Dec. 7, 1935.

(2) Fourteenth Annual Report of the North Carolina Sanatorium for period from July 1, 1926, to June 30, 1927. Pages 26, 27 and 28.

(3) Hiss and Zinsser, Text Book of Bacteriology, 5th Edition, P. 124.
(4) Krause, Allen K., The Evolution of Tubercle, P. 43.
(5) Swindells, Frank E., Recent Developments in Fluoroscopic Screens, The X-ray Technician, Vol. 6, P. 162, April 1935.

(In connection with slides, shown at page 4 of the prepared paper):

(Slide I) This patient was sent in for diagnosis. He is a mill worker. About two months previous to our examination he had developed a cough, and he had not been feeling so well. About ten days previous to this examination he had had a slight hemorrhage. You will notice on the right side, at the level of the second rib, there is an area of infiltration, within which there is a small cavity. This man has since been in bed, and the last film made shows this lesion practically cleared up.

(Slide II) This patient is a nurse. For eighteen months previous to this examination she had been nursing a patient who had recently died. She came for examination purely as a precaution. She had no symptoms and no physical signs. As you can see, there is a very light mottled density right in this area. She likewise has been resting, and more recent films show this practically all absorbed.

(Slide III) This patient has a very minimal lesion. In the slide it is almost impossible to see it. You can see it on the film, of course, much better. Right in this area there is a very light mottled density.

This patient's husband died in September 1936 of tuberculosis. About the time that he was very ill, she came for examination and this very slight lesion was found. She rested a couple of months at home, or perhaps a little longer, and then came down to the Sanatorium and stayed a few weeks. This has practically all absorbed and she is now apparently perfectly well.

(Slide IV) This patient, as you see, has a very small density in the left apex. Her husband has tuberculosis, and has been sick for two years. He has been a patient at the Sanatorium for a good part of that time. This woman had had previous examinations at which time nothing was found. This film was made in January. In December she caught cold, which was followed by a cough for about two or three weeks. She hadn't been feeling so well, so she came for examination again and at that time this slight lesion was found. She is now resting and apparently is getting along very nicely.

(Slide V) This patient has what we call a very bad family history. Her father died of tuberculosis in 1935. She has a brother who broke down with tuberculosis in 1936. She was examined in 1935 at which time nothing abnormal was found, and in October 1936 she came for examination and this small area of infiltration was found. She had no symptoms, and no physical signs. She felt so well that she thought we didn't know what we were talking about when we told her that she should rest.

She went back to her school and continued at work for two months, (slide VI) at which time she returned. About two weeks before she returned

she had developed a cough and she got so that she wasn't feeling so well. In this area here, if you will remember the other slide, you will see that she has had a distinct spread of her trouble in the two months' period when she didn't take any treatment. After this was found she was convinced of the nature of her trouble and she has been on the cure and is getting along very nicely now.

(Slide VII) This patient is one which demonstrates the great advantage of the fluoroscope. I might say that during one of our children's clinics, I tuberculin-tested the daughter of one of North Carolina's physicians and the day that he received notice from the school that his daughter had a reaction he loaded his daughter and his cook into a car and carried them to the Sanatorium. Dr. McCain fluoroscoped this colored cook, and she was found to have this small area of infiltration at the apex. This is undoubtedly where the child received her infection. Of course, she was immediately put under treatment and has shown considerable clearing of this area since resting. Probably if she had been allowed to continue at work and had exposed the child further and further, the child might have gotten sufficient infection to have developed real clinical disease, herself, from this patient whom the doctor himself didn't realize had anything wrong with her, because he had examined her, and we had examined her, and she never has had any physical sign.

(Slide VIII) At Sanatorium we routinely examine our employees once or twice a year. This girl had been working there as a colored maid. She had been working on the ward for about four or five months. During the regular routine examination these large caseous glands were found. She doesn't have any parenchymal lesion but she does have a caseous bronchial node on either side. If she had been allowed to continue, these things might have broken down, though it is possible that they would have cleared up without any special treatment. But we feel that she should have treatment. She has rested for three months. Since then she has been at home just doing her regular housework and in addition has had some deep therapy x-ray to those glands. They have shrunk down considerably and are now beginning to show evidence of calcification.

(Interpolation, at the bottom of page 5, preceding the words, "Eighteen students who were likewise," etc.):

(Slide IX) This is one of these students. He has not had his chest examined by us, and I do not know whether he has physical signs or not, but he had no symptoms, and he has a very slight lesion at this right apex. It is sufficient to call it tuberculosis, but it is so slight and the appearance of it is such that it is doubtful whether there is any activity at all in the lesion.

(Slide X) This is the other patient which, in the slide, is most difficult to see. There is a very slightly increased density within the circle of the first rib on the left side. She likewise had no symptoms, and was attending school, going about her usual activities without any trouble.

(Interpolation preceding the words, "Eight students were diagnosed," the middle of page 6):

(Slide XI) You see this large tracheobronchial gland at this right hilum. This student had no symptoms, and no physical signs, of course. I shouldn't say he had no physical signs, because we didn't examine him, but we presumed that he didn't. And this is apparently a caseous tracheobronchial node.

(Slide XII) And this patient had one on the left side. The first slide was not seen in the fluoroscope, and this one was.

I feel that there was some error on our part in not having seen both of them. I think we should have, because one is just as easy to see as the other. I think it was our own personal error.

. . . Dr. Thomas then concluded the presentation of his prepared paper. . . (Applause)

President Strosnider: The Secretary will announce the next paper.

Secretary Long: "The Exogenous Toxic Amblyopias," from the Section on Ophthalmology and OtoLaryngology, by Dr. J. M. Lilly, of Fayetteville.

Dr. J. M. Lilly: When Dr. McCall of Asheville asked me to present a paper before the General Session I told him that I very much appreciated the compliment of being asked to do that but I was afraid it would be very difficult for me to present a paper that would be of any particular interest. In casting around for something to write about, I decided that the toxic amblyopias of exogenous origin were of as much interest to the general practitioner as to the ophthalmologist. I have a brief outline of the literature on that subject and just a few slides to show.

. . . Dr. Lilly then presented his prepared paper. . .

THE EXOGENOUS TOXIC AMBLYOPIAS

By J. M. Lilly, M.D., Fayetteville
(From Section on Ophthalmology and OtoLaryngology)

Fields taken: Nov. 28, 1911; Feb. 7, 1912; July 27, 1915; Feb. 27, 1917; April 24, 1937. This patient was taking hypodermics of atoxyl for pellagra when first seen Nov. 28, 1911. Note the change in fields over a period of 26 years. Left eye almost blind now. Right eye has a distant vision of 20/20 and can read Jaeger No. 1 but field is so small he finds his way with difficulty.

Since most cases of toxic amblyopia are seen first by the family physician they are of equal interest to the general practitioner and the ophthalmologist. The condition most frequently occurs (1) as a result of drugs, such as quinine and arsenic, administered for the alleviation of disease. (2) Habit forming drugs, such as alcohol and tobacco. (3) Drugs taken with suicidal intent or to produce abortion, for example arsenic,

quinine, ergot. (4) Prolonged exposure to poisons used in industry or as local applications, for example lead and wood alcohol.

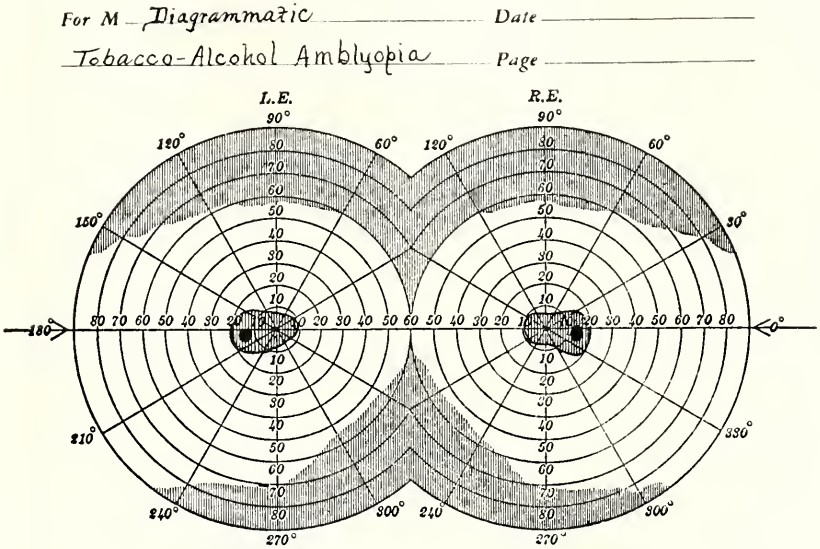
Temporary or permanent blindness, partial or complete, may be produced by toxic substances circulating in the blood, due either to action on the brain centers or the retina or on the nerve fibres that constitute the visual pathway.

Harmful agents may be elaborated in the body, as for example in diabetes, malaria, pregnancy and focal infections, but in the time allotted for this discussion only the exogenous forms will be discussed, and since my observation of these conditions is confined to a comparatively small number of cases I have consulted freely such authors as Ball, deSchweinitz, Fox, Oatman and others.

The poisons which produce amblyopia may gain entrance into the body by mouth, skin, nose, respiratory tract, rectum, vagina or by intravenous, intraperitoneal, intrapleural or by hypodermic injection. According to Schlippe the unborn infant may have optic nerve atrophy as a result of drugs administered to the mother, while the eyes of the mother escape. Cases due to the following drugs have been reported:

Alcohol,
Atoxyl and other synthetic arsenic compounds,
Anilin,
Antipyrin,
Antifebrin,
Benzin,
Belladonna,
Carbon-bisulphide,
Carbon monoxide,
Coffee,
Chocolate,
Carbolic acid,
Cannabis indica,
Conium,
Carbonic acid gas,
Curare,
Copper,
Cocaine
Eucaine,
Ergot,
Filix mas,
Gelsemium,
Holocain,
Digitalis,
Iodoform,
Lead salts,
Mercury,
Mescal,
Nitro-benzol,
Naphthalin,
Nitrite of Amyl,
Nitro-glycerine,
Optochin,
Oil of Wintergreen,
Pelletierin,
Phosphorus,
Quinine,
Stramonium,
Salicylic acid and Salicylates,
Snake venom,
Salvarsan,
Sulphur,
Santonin,
Strychnine,
Tobacco,
Tri-nitro-toluol,
Tea,
Thyroidin.

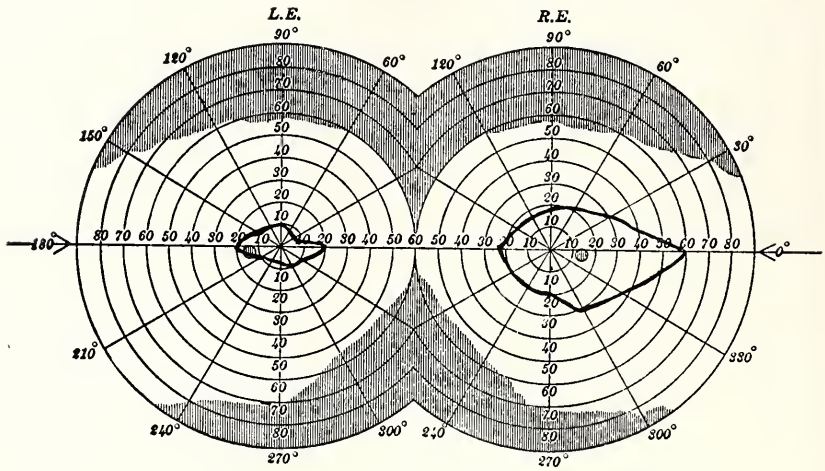
Uhthoff[1] divides the optic neuritis which accompanies the toxic amblyopias into two general classes: (1) Those characterized by a retrobulbar neuritis with central scotoma and normal peripheral fields, and to this class belong tobacco, alcohol, arsenic, stramonium, iodoform, cannabis indica, bisulphide of carbon and possibly others, and appear to involve



largely the papillomacular bundle. In poisoning from this group there is little or no ophthalmoscopic change, and the subsequent atrophy is apparent only in the outer half of the disk.

The second group causes more marked pallor of the disks and the vessels take on a fine hair-like appearance and in contra-distinction to the other group the peripheral fields are contracted while the central vision may remain good. Quinine, methyl-alcohol, salicyclic acid, male fern and pomegranate belong to this group, and prognosis in these cases is more unfavorable than in the first group. The pallor and atrophy involves the entire nerve head.

Tobacco-Alcohol. We will first discuss tobacco and alcohol together, since this is the form most frequently seen and often are joint factors in producing amblyopia. The use of tobacco in any form may cause it, chewing, pipe, cigars, cigarettes, and I have seen one case in a domestic servant due to taking snuff. It has also been reported in workers in tobacco who do not use the weed in any form. Most observers are agreed that tobacco plays a major part, and there is a question with some, if not all, British authorities whether alcohol has anything at all to do with it. Since many users of tobacco are also addicted to alcohol it is impossible to say that any such case is due solely to the one or the other, but many cases do occur in persons who use tobacco and are total abstainers from alcohol, but it is rarely found in alcoholics who do not use tobacco. Lewin and Guillery have noted that although enormous amounts of tobacco are used in the Orient it rarely causes amblyopia and then only when associated with alcohol. While it is desirable to withdraw both poisons entirely and as rapidly as possible, many cases have recovered visual acuity by leaving off

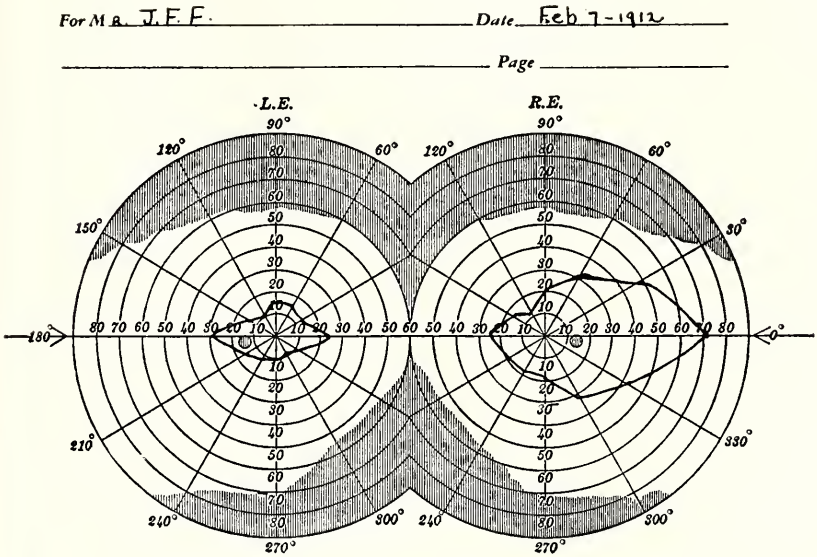


tobacco and continuing the use of alcohol. While it has not been proven, the old lay idea that one poison counteracts the other was believed in by Jonathan Hutchinson,[2] who said: "Total abstainers from stimulants are more likely to suffer than others, although we sometimes meet with the disease in the intemperate. I have a strong impression that on the whole alcohol counteracts tobacco." Personally, I have seen cases where both were used, but I think as many where tobacco alone was used, but I do not recall having seen a case due to ethyl alcohol alone; however, such cases have been reported. Middle aged individuals who have used tobacco for a number of years are the most frequent victims. Cigarette smoking is least likely to cause it, next cigars, while pipe smoking of strong tobacco is the most frequent cause.

Copper. Galeszawoki says toxic amblyopia has been known to occur in musicians who play wind instruments with copper mouthpiece.

Arsenic. According to Moore the replacement of the old trivalent arsenic preparations, such as atoxyl, by the newer pentavalent or salvarsan group has greatly decreased the incidence of amblyopia from arsenic poisoning: still optic neuritis, with its attendant amblyopia, may follow the latter, although I have never seen such a case. One case treated by me followed the use of atoxyl given for pellagra.

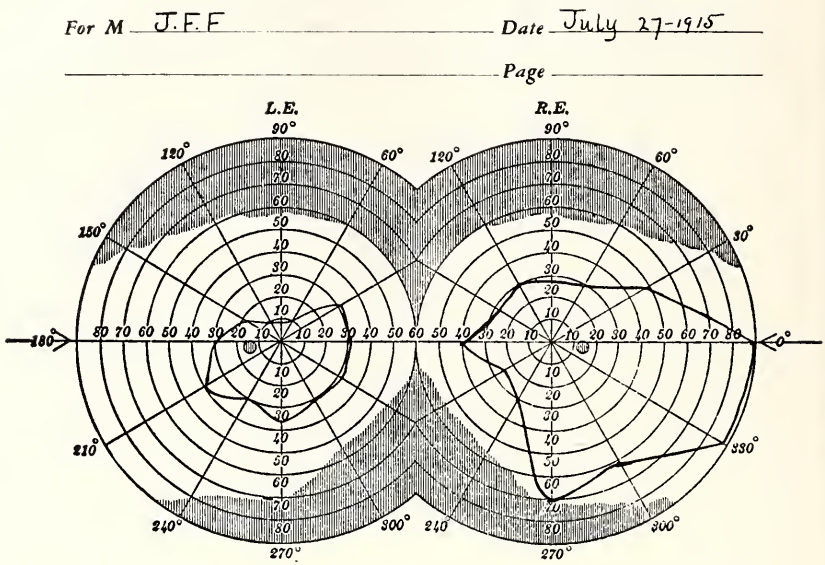
Lead, as a cause of amblyopia, is much less frequent than formerly, since workers in the industries where lead is used have more safeguards thrown around them now that they have learned to do this. It may cause a temporary amblyopia with no ophthalmoscopic changes, or a retinitis and neuritis followed by atrophy may occur. Gibson[3] of Brisbane, Queens-



land, reported sixty-two cases of plumbism in children two to eight years of age, and thirteen percent of these he found to have involvement of the optic nerve or of the extra-ocular muscles. He traced the source of the poison to lead paint used on the railings around verandas and gardens. After careful search of the literature and correspondence with different authorities, I find no case on record where eye symptoms have resulted from contact with gasoline treated with tetra-ethyl-lead. In some cases the trouble may be confused with brain tumor, but accompanying the eye symptoms we usually have colic, headache, blue gums and wrist drop.

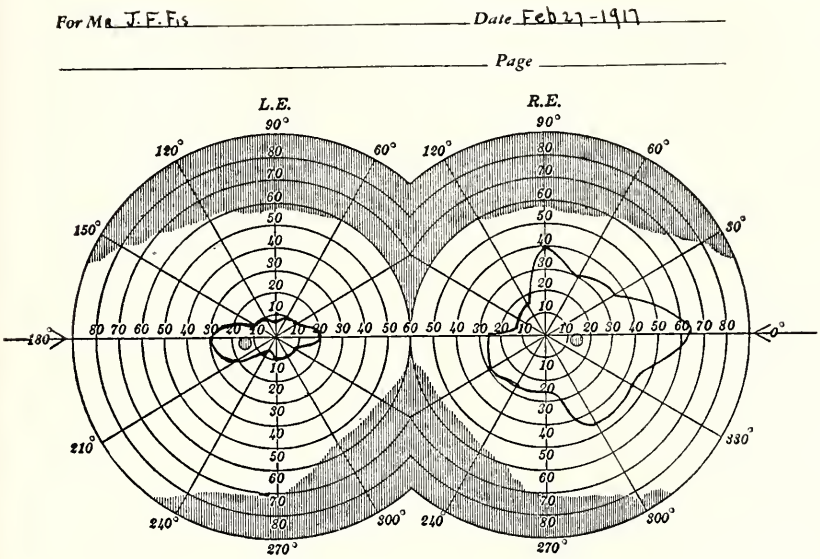
Carbon Monoxide, with reference to its effect on the eyes, has been carefully studied by Wilmer[4] and he found it responsible for cases of ocular paralyses, hemianopsias, pupillary disturbances, optic nerve atrophy, also conjunctival and retinal hemorrhages and hallucinations of vision, hearing and feeling. *Carbon Bisulphide* used extensively in the manufacturing of rubber may cause similar symptoms. There should be mentioned here that many cases of cataract due to dinitro-phenol, have been reported by various observers, and this drug put out and used extensively as an antifat has fallen into disrepute on this account and discontinued.

Aspidium. Sidler-Huguenin in 1898 collected seventy-eight case reports of aspidium poisoning, resulting in twelve deaths, eighteen blindness in both eyes, thirteen blindness in one eye, five great reduction of visual acuity which was permanent, and two regained vision. This drug is soluble in oil, which greatly accentuates its action, so when used as a vermicide no oils of any kind should be given during the treatment.



Visual Fields. There is considerable variation in the visual fields in the amblyopia caused by the drugs thus far discussed, depending upon (1) the dose taken (2) the nature of the poison and (3) the susceptibility of the patient. In early stages of tobacco-alcohol amblyopia it is often difficult to demonstrate any field defect for white, even when there is a very marked dimness of vision, but there is always a central scotoma for colors, usually quite limited in size and involving the area from the macula to the normal blind spot or disk. First green disappears, then red and blue in the order named. This blind area is usually relative, but may be absolute. In lead poisoning the field changes are very variable, sometimes peripheral contraction for form and colors, or there may be full peripheries with central scotoma. Carbon Monoxide usually causes extreme concentric contraction with or without scotoma, arsenic more likely to cause extreme concentric contraction with good central vision.

Pathology. According to Nuel and Holden the first tissue change in these amblyopias is a retinal nerve cell chromolysis which progresses to cell destruction. Birch-Hirschfield thinks that the pathology of toxic amblyopia has a double origin, one in the retina and one in the optic nerve, but thinks the ganglion cell changes in the retina occur first. Observers have shown that in severe cases an interstitial inflammation of the fibres of the papillo-macular bundle is followed by a degeneration running back through the nerves, chiasm and tracts, but these changes can be demonstrated only back of the lamina cribrosa where the fibres take on their medullary sheaths. These changes in this particular location account for the central involvement in the foregoing forms of amblyopia.

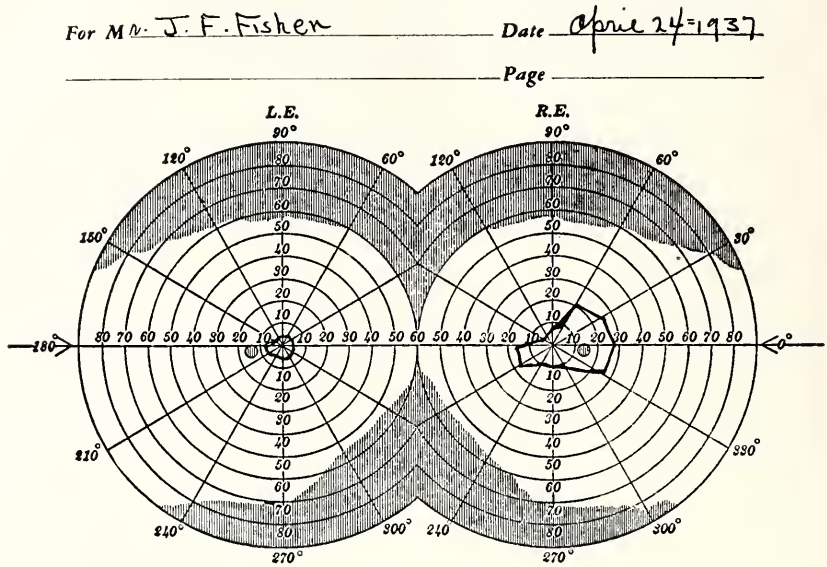


Prognosis should always be guarded and much will depend on seeing the case early and coöperation on the part of the patient. In the case of tobacco-alcohol improvement is almost sure to follow complete abstinence from the drugs, and the same is true of arsenic, iodoform, stramonium, cannabis indica and carbon bisulphid—, that is, if the drug is withdrawn improvement is likely to follow. In the case of lead poisoning much depends upon the stage; if organic nerve changes are visible to the ophthalmoscope the prognosis is poor.

Treatment. Withdraw the offending cause and avoid all exposure to it. Elimination by purgation, diuresis and diaphoresis. Administration of potassium iodide and, after the acute stage is past, full doses of strychnine.

Quinine and methyl-alcohol amblyopias do not follow the general course of the other exogenous amblyopias, therefore deserve special description, and optochin (ethyl hydro-cuprein) being a cinchona derivative, is similar to quinine. This latter drug was supposed to have some specific action on the pneumococcus, and at one time was used extensively in the treatment of pneumonia.

In 1820 Caventou and Pelletier isolated and studied quinine and soon thereafter it was found that in some people the drug would cause headache, tinnitus and dimness of vision. As long ago as 1857 von Grafe studied cases of quinine amblyopia ophthalmoscopically, and he found the fundi normal. For a time it was contended that the eye symptoms were due to the existing disease, such as malaria or syphilis, since most of the cases to whom it was given were suffering from some systemic disturbance, but it was later definitely established that quinine will produce the condition



when administered to normal subjects. The World War gave an unprecedented opportunity to study many diseases, and since armies of young men from almost all over the world were carried into malarial districts and were given quinine indiscriminately, and often in large doses, its effect on the eyes could be studied more extensively than ever before. Elliott[5]. While the method of administration, whether by mouth or hypodermic injection or intravenously, the solubility of the preparation used, whether the sulphate or the hydrochloride, the vehicle of administration, whether solutions or pills or powders, are factors in its production, the idiosyncrasy of the patient is the greatest danger, and as little as two grains has produced alarming symptoms. Ball[6] says women and children are most susceptible, and the only case of quinine amblyopia I have seen was in an infant girl, and the only case following optochin was also an infant girl. deSchweinitz[7] reports 69 cases gathered from the literature, forty-two males, twenty females, seven sex not given, varying in age from three to sixty-five years, and only one case is recorded in the group of a negro suffering from the trouble. Such doses as 15 grains to an ounce or more in twenty-four hours have been known to produce it.

Symptoms, complete or partial loss of sight, dilitation of pupils, pallor of disks and contraction of the retinal vessels, contraction of fields, alteration in light and color sense and, at times, night blindness. Pupils react feebly to light or not at all. These subjective findings may be accompanied by gastro-intestinal irritation, respiratory embarrassment, delirium, convulsions and coma, less frequently hallucinations. H. Edgar Smith[8] reported fourteen cases in soldiers in Macedonia, and all had widely dilated

pupils if seen in first four days, twelve reacted to light feebly, two not at all. Some lost even light perception, others could detect hand movements. The narrowing of the vessels usually occurred after the fourth day and, strange as it may seem, the vision improved as blood vessels became smaller. Different observers have reported widely varying ophthalmoscopic findings, sometimes engorgement of vessels with numerous punctate hemorrhages, sometimes blanched fundi with cherry red spot at the macula stimulating thrombosis of central artery of retina, but the most frequent picture is pallor of disks and diminution of calibre of the vessels.

Fields, concentric contraction oval horizontally, blue suffers more than white and other colors. Central scotoma rare but have been observed.

Pathology. Not a great deal is known as to the minute pathology, and so far as I am able to find in searching the literature at my command, only one case has been studied microscopically after death, and this was reported by Fortunati[9] in 1905. A male fifty-nine years old was given 50 grains of quinine hydrochlorate subcutaneously in two doses. He became blind eight hours after second dose and died eight days later. Twelve hours after death the eyes and orbital portions of the optic nerves were removed and the nerves found normal. The retina showed signs of degeneration, but these changes may have been cadaveric in origin.

There are two distinct opinions as to explanation of this form of amblyopia: (1) Starvation of the retina by constriction of the vessels (2) A direct select toxic effect on the retinal cells. Both are probably partially correct, that is, it is probably a combination of the two.

Diagnosis. The condition may be mistaken ophthalmoscopically for embolism of the central vessel of the retina, but the latter is usually unilateral, while the quinine amblyopia is usually bilateral, then too the history of taking the drug. Cinchona amblyopia differs from all other amblyopia in that vision is lost completely and sometimes suddenly, vessels are attenuated and disks pale early with a marked recovery of central vision first and to some extent peripheral vision later.

Prognosis: Good for recovery of useful central vision, but the field usually suffers permanently. One case has been reported by Claiborne[10] which had vision only for hand movements at six feet after two years.

Treatment: Discontinue the drug, eliminate by skin, kidneys and bowels, liquid diet. Among the drugs recommended hydrobromic acid, ergot, potassium bromide, tincture opium, alcohol, digitalis, nitro-glycerine, strychnine, amyl nitrite. Massage, galvanism. Operations for permanent reduction of tension, as in glaucoma, have been suggested, as iridectomy or corneo-scleral trephine, also removal of the superior cervical sympathetic. Be careful always in prescribing quinine, especially alcoholic solutions. If vomiting occurs during its use discontinue at once. *Do not* give quinine to a person who has idiosyncrasy for it.

Wood Alcohol. Formerly all wood alcohol was vile smelling, but it has been refined until it is as clear and almost as palatable as ethyl

alcohol, and this fact together with its cheapness and wide spread use in industry has made it more of a menace than formerly. It may produce ocular symptoms when taken by mouth, absorbed through the skin or inhaled. Unscrupulous peddlers have distributed it about the country under false labels. Then too, many household preparations contain more or less of it, among which may be mentioned the numerous essences and extracts, witch hazel, perfumes, hair tonics, many patent medicines, and it has been used to adulterate various beverages. Burning fluids and canned heat and anti-freeze mixtures consist largely of methyl alcohol, and much of the article sold for this purpose has been diverted to beverage use by ignorant or unscrupulous employees of garages. A poison label should be required by law on all wood alcohol preparations, since it is used in such enormous quantities in the arts and industry.

Most cases of poisoning by this drug have been caused by drinking it, and as small amount as one dram has caused blindness. It has been denied that it will produce symptoms by inhalation but such cases have been reported by reliable authorities. The use of toilet waters and liniments have caused it, and these cases are usually of slow development and quite insidious in onset.

Symptoms are nausea, vomiting, dizziness, headaches, weak slow pulse, cold clammy skin, coma and death. The eye symptoms may develop early and may be sudden and complete loss of vision, the pupils dilate and may or may not react to light, sometimes diplopia, due to paralysis of extra-ocular muscles. There may be no early ophthalmoscopic changes, but later we get the picture of a primary nerve atrophy, and cases have been reported in which the nerves were chalky white in a few hours after ingestion of the poison.

Fields show concentric contraction for form and color where there is any vision left but central scotomata are less frequent.

Diagnosis may usually be established by a carefully elicited history. Acidosis is almost always present in early stages, shown by carbon dioxide in the blood. The urine shows formic acid, and this may confuse the condition with diabetes, since this reduces Fehling's Solution.

Prognosis. Many patients die in a few hours. Statistics are not abundant, but most cases who survive the acute attack are left blind for life, although some recover useful vision. In the chronic form due to rubbing lotions or inhalation the prognosis is more hopeful.

Treatment. Emesis, stomach pump. Bongers states that much of the alcohol in the system is returned to the stomach, so that lavage should be continued for several days, purges, alkaline enteroclysis, pilocarpine, hot drinks, hot packs and later potassium iodide and strychnine, negative galvanism 2½ to 3 M.A. for twenty minutes three or four times a week.

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(Slide) Nearly all the younger men, whether opthalmologists or not, use the opthalmoscope. For those who don't use it daily, I think it may be interesting to show a normal fundus. This is the normal fundus of a young blonde girl. By the way, these colored plates that you see are by Oatman. They are taken from Oatman's collection. I have no way to photograph the fundus, and am not artist enough to paint these things as I have seen some of them.

You see here the pink retina and the dark veins and the light arteries are almost the same size. The arteries are not quite as large as the veins. You also see the disc, which is whiter than the remainder of the field shown. There is still enough pink vascular condition for its blood supply.

This is a case of optic nerve atrophy such as is seen in tobacco and alcohol amblyopia, and a lot of the cases of arsenic or lead amblyopia, where there is not a complete atrophy of the disc. The outer or temporal side or the macular side has failed, and this other side is entirely normal, with a pink vascular appearance.

In those cases there is oftentimes no diminution in vision whatever.

(Slide) This wasn't taken for quinine amblyopia, but it presents exactly the same ophthalmoscopic picture. This is one of Oatman's collection. This is a case of complete pallor, almost cotton-white appearance of the disc, with very, very small arteries. You see here the veins are almost as large as in the normal fundus, but these arteries are just hair-like, thread-like.

I have seen two cases of quinine amblyopia, and that is very much the appearance of it. Yet in one of these cases I saw, through the use of oxygen in infancy—and the girl is now ready to graduate from high school—she has a disc as white as that. Yet she has twenty-thirty vision and is getting along perfectly well in school.

(Slide) This is another of Oatman's collection, in which there is a marked retinitis, with an obstruction to the vessels here where they are blurred by a serous exudate, and yet this is in the very early stages, a few hours after the ingestion of wood alcohol when this picture was made, and the disc has not become blanched but is still normal in appearance except

where the retina has overlapped at the edges. There is enormous enlargement of the arteries and veins there.

(Slide) This was made for a picture of obstruction of the central retinal vessel but it is rather typical of the early stages of quinine poisoning—the cherry red spot in the macula here, and the areas of hemorrhage in the retina, with the arteries much smaller, and even blood broken off in some of them, where the column of blood doesn't go through an artery, with a blanching of the disc and a blurring of the margins of the disc.

(Slide) That is a field in tobacco amblyopia and is diagrammatic. That is not actually taken from a patient. Of course, all this area here to the opthalmologists here is perfectly familiar, but some of you may not see these blank charts so often. That means that this patient should see in all this white area here and on out even past that, in the temporal field, and that this one black spot here is a normal blind spot, representing the entrance of the optic nerve through the sclera.

In tobacco-alcohol amblyopia this vision is all good. The patients may drive a car and walk about the street perfectly well and not have much trouble. But when they go to do close work there is a relative scotoma or blind spot involving the macula and the normal blind spot, all in an area so that they can't see well. They cannot see to do reading or writing or any close work, yet they are not handicapped a great deal in getting about. That condition usually clears up in a few weeks, if you can get the coöperation of the patient to withdrawal of the drug.

(Slide) The only other slides I have are a series of about six.

In 1911 a patient came to me with a history that he had pellagra and was taking hypodermic injections of a toxin, or that he was taking hypodermic treatments—and I got that history from the doctor. This was his field.

His left eye was down to gun-barrel vision. He could see nothing at all out here. This is all dark. It should be like this up to here. And he had one little spot in the middle. Looking at the test chart at twenty feet he could see only one or two letters, but he had twenty-twenty vision all the way across in that area. The vision of the right eye was materially reduced. He could see in that large area, but not nearly as much as in the left.

(Slide) The next picture was taken about three months later. I have had the observation of this case for twenty-six years. The last time I saw this man was just about two weeks ago. This shows a little improvement in the field. The left eye has come up a little and the right one has come up considerably. He has a larger field.

I will state that in both of these cases this man had twenty-twenty vision and could read Jaeger's number one but he could only see in one small space.

(Slide) I think this was taken about two years later, probably in about 1915. I saw this man oftener than that but I did not chart his field each

time I saw him. You see there, there is a decided improvement. That is in 1915. The other one was in 1912. This field is almost as large as the right one was, and this one is approaching normal proportions—which was encouraging. But there is another story later.

(Slide) I saw him again in 1917, and he was back as bad as he had been. This one is about as small as it had been and this one is a little better than it was in the beginning, but not nearly so good as it was in 1915.

(Slide) I got in touch with this patient and saw him on April 24th of this year. The vision in this eye is very poor. Up to this time he could read twenty-twenty with either eye, even the one that had such a small field, with refraction. But this time the vision in this eye was very poor, and he could only see small white objects right in the center—inside. It doesn't even come out to the normal blind spot. He has just a tiny little area of vision. He couldn't see all of a twenty-forty test letter. He could see just a part of it when you held it up two or three feet in front of him. This was cut down to about as small as his worst eye was in the beginning. So that man today with this eye has twenty-twenty vision, can't read Jaeger Number 1 type, and can't see but about one or two words at a time, and he can hardly find his way around, because it is just like looking through a gun-barrel. He can see through just that little area. (Applause)

President Strosnider: I wish every doctor in this Society could hear these excellent practical papers that are being presented. They are so practical that all general practitioners can understand them.

After the meeting, I want to tell Dr. Lilly about one case, a tobacco case. He might add that to his collection.

The Secretary will announce the next paper.

Secretary Long: The next paper is, "Chorio-Epithelioma of the Uterus," from the Section on Gynecology and Obstetrics, by Dr. Robert Thrift Ferguson, of Charlotte.

. . . Dr. Ferguson presented his prepared paper. . . (Applause)

CHORIO-EPITHELIOMA OF THE UTERUS

By Robert Thrift Ferguson, M.A., M.D., F.A.C.S., Charlotte, N. C.

The subject about which I have chosen to speak to you is one of paramount interest and importance. The disease is comparatively rare and no one man has been able to report a large series of personal cases. My experience is limited to one case over a period of 30 years in pelvic surgery. While the disease is rare it is more to be dreaded than any post-partum complication that I know of from the standpoint of prognosis.

The disease has been written about as MALIGNANT SYNCYTIOMA, CHORIO-ADENOMA, CHORIO-CARCINOMA and CHORIO-EPITHELIOMA. The nomenclature has been very much confused because of a lack of recognition of the various types of chorionic proliferation and

the widely varying courses of the various types of the disease. A logical classification is now available, and one that has stood the test of time.

The incidence of chorio-epithelioma differs in different countries according to Lynch. Among 2700 autopsies in a Vienna hospital 7 cases were found. Gordon reports 800 autopsies at Belleview hospital finding only one chorio-epithelioma. Out of 4500 abortions at Belleview 21 cases of hydatid mole were seen. Until four or five years ago less than 600 cases of chorio-epithelioma had been reported. Szathmary collected 11 cases from 53,000 consecutive pregnancies, or one out of 4900 pregnant uteri. Nurmburger reports 33 cases of primary chorio-epithelioma of the fallopian tubes.

Metastases occur very early and are practically always present in advanced cases. Ewing says among 450 cases of all types of chorioma collected by Polleson and Violet vaginal metastases occurred in 93, pulmonary in 133 and cerebral in 40.

Saenger, in 1888, was one of the first to describe the diagnostic symptoms. Gottschalk, I believe, was the first to describe its fetal origin, which was concurred in by Frankel and Durante, but it was Marchand, in 1895, who first recognized that the syncytial and Langhan's cells from the chorionic villi were histologically responsible for the condition.

The histopathology of typical chorio-epithelioma as described by Schmitz is as follows: "The typical malignant chorio-epithelioma is composed of both epithelial cell elements of the chorion. They assume embryologic morphologic characters and biologic activities. The cells form masses and columns with marked vacuolation and necrosis. One or the other cell type may predominate. The connective tissue core disappears entirely as a result of the proliferating activities of the epithelium. Mucous degeneration in the epithelial cells leads to the formation of vesicles. Fetal capillaries are absent. Syncytial wandering cells are often seen in the maternal tissue. The syncytial and Langhan's cells are in active proliferation, have many mitotic figures and show marked anaplasia. The highest potential malignancy seems to be conferred by the presence and activity of Langhan's cells. There is an invasion by active penetration of the vascular sinuses and destruction of the adjacent tissue. Metastasis takes place by emboli in blood vessels locally and distantly. The growth and metastatic foci cause the formation of a zone of reaction of the maternal tissues against the invasive malignant cells. It is composed of round and plasma cells, leucocytes and fibroblasts."

Chorio-epithelioma and Hydatidiform Mole are so closely related that I deem it wise to give a definition of both, and the best definition I have been able to find is by Beasley: "A chorio-epithelioma is a malignant neoplasm originating from the epithelium covering the chorionic villi of the placenta with undue proliferation of Langhan's and syncytial cells, characterized by easily provoked hemorrhage and widespread metastases." "Hydatidiform mole is a disease associated with pregnancy in which the

chorionic villi are deformed in structure with undue proliferation of Langhan's and syncytial cells and presenting a mass of translucent grape-like vesicles and varying in size from a pin-point to 4 cm. in diameter."

Chorio-epithelioma is defined by Black as "An undue proliferation and infiltration of anaplastic and dissociated syncytial and Langhan's cells characterized clinically by uterine bleeding and metastases."

Chorio-epithelioma is easily the most malignant member of this group of tumors. It usually occurs in young women, especially during the child-bearing period, but has been reported as occurring as late as 70 years of age. I would doubt the occurrence of true chorio-epithelioma at this late age, or at any time after the possibility of the development of the chorion. It occurs at any time from a few days after labor, abortion or hydatid mole, to as much as two years or longer. Curtis reports a case occurring 18 months after the expulsion of the mole.

The symptoms given by Schmidt, as propounded by Saenger are as follows: "History of a preceding labor, abortion, or the expulsion of a hydatid mole; persistent hemorrhage from the uterus, continuing after a curettage; hemorrhagic-putrid discharge and secondary infection following intrauterine instrumentation; progressive enlargement of the uterus; rapidly progressing anemia and cachexia; early metastases, especially in the vagina and lungs, with cough, dyspnoea and hemoptysis; rapid course with death within 6 to 7 months." It is not unusual for a case to have a period of amenorrhea, and such have been reported.

Beach reports a case of chorio-epithelioma in a 19 year old woman and Peightal does the same. Beach's case was treated with 3600 milligram hours of radium and followed ten days later with X-ray, getting 5 exposures in a week. Six weeks later she had a panhysterectomy and at the edge of the muscle layer were found typical chorio-epithelioma cells. Eighteen months later the patient was well and free from metastases. This was an early case and radium was applied 7½ weeks after the uterus had been emptied of a hydatid mole.

Ewing says "Chorio-carcinoma gives less definite clinical manifestations of its onset than do other forms of the disease. It follows normal labor promptly, or after a long interval, ectopic pregnancy, retained placenta, hydatid mole and abortion. The uterus is often only slightly enlarged. Many cases are first recognized by examination of curettings for hemorrhage. All pelvic symptoms may be wanting and the illness begin with hemoptysis, hemiplegia, peritonitis, severe vomiting, or the appearance of a vaginal tumor. Occasionally the disease masks a puerperal fever. Death results from cachexia, hemorrhage, pulmonary embolism, peritonitis or cerebral invasion. With or without hysterectomy the disease usually lasts from 6 to 18 months. Much more rapid courses are occasionally observed." Curtis and Oui reported hysterectomies in 181 cases of chorioma of all types with 17 operative deaths. Curtis says he has been unable to find any record of operative cure of chorio-carcinoma or chorio-

epithelioma, and most authors agree that chorio-epithelioma destroys the life of the mother. A few cases have been reported by other authors of cure following hysterectomy and radiation, but it is doubtful if these were true chorio-epitheliomas, or that they had run the full five year period established for cures, when they were reported, and, if so, they were caught in the very early stage with complete removal of all the cancer cells before breaking down or metastases. Lackner and Leventhal reported a case cured by hysterectomy and roentgen therapy.

Please bear in mind this fact, early removal, or destruction by radiation, in any form of cancer, is the only hope of cure. The younger the patient the more rapid is the course of the growth, as is well established in other forms of cancer.

Several cases have been reported of rupture of the uterine wall from chorio-epithelioma, which led to a diagnosis of ruptured extra-uterine pregnancy, and the true nature of the case was only discovered at operation.

While chorio-epithelioma is rare, hydatidform mole is rather common, and probably 10% of the cases of mole become chorio-epithelioma (Leventhal & Saphir). The detection of metastases after operation is possible with the Aschheim-Zondek test before clinical signs manifest themselves, therefore in suspected cases the Aschheim-Zondek test should be repeated at frequent intervals to detect early metastases. If the test is negative following the removal of the tumor you may be positive that metastases or recurrence of the tumor has not taken place. In normal pregnancy the concentration of anterior pituitary-like substance in the urine begins to increase up to the 5th month, then gradually decreases until 8 to 14 days after delivery then almost entirely disappears; in hydatid mole the concentration increases progressively and rapidly. Schmidt says that lutein cysts of the ovary are observed in from 10 to 20% of the diseases and new growths of the chorion, but as soon as the mole has been expelled, or the chorioma has been removed, the cysts regress as they do after termination of a normal pregnancy. Histologic examination should be done on all tissues removed or expelled from the uterus to be on the look-out for malignancies. Chorio-epithelioma never regresses, though it is possible to have regression of the metastases following removal of the uterus and radium or X-ray treatment. Schmidt says in summing up his report that if malignant chorioma does not recur within 6 months the patient will probably remain well, and if it does not recur within a year after the cessation of treatment, the patient may be considered cured.

Teacher reports that only 4.7% of cases appear with the first pregnancy and this increases rapidly until 38% occur in women who have borne 5 or more children. In a series of 188 cases 36% occurred after hydatidform mole; 31% after abortion; 28% after labor and 4% after tubal pregnancy. The location of the tumor will be in the uterus, tubes, vaginal wall, ovaries or abdomen, depending on the character of the pregnancy.

According to statistics at least 50% of chorios follow upon hydatid mole. Percival says about 8% of hydatid moles undergo malignant degeneration and a history of mole is found in about 50% of all cases of chorio-epithelioma.

Chorio-epithelioma spreads by way of the veins, after the manner of sarcoma, whereas carcinomas are apparently metastasized through the lymphatics.

The diagnosis is made by curettage and pathological examination of the scrapings finding syncytial and Langhan's cells, and by the Aschheim-Zondek test. Curettage as a diagnostic test is not always certain because of the possible location of the tumor at a distance from the endometrium, and is also sometimes dangerous because the site of the friable growth may be perforated (Levantahl & Saphir). Bleeding following labor or mole pregnancy is usually the first clinical sign of the possibility of chorio-epithelioma. Sometimes hemorrhages begin weeks or months after the products of conception have been removed. A complete history will be of invaluable assistance in the diagnosis. The size of the uterus will depend entirely upon the stage of the disease. Frequently the growth of the uterus is very rapid.

The differential diagnosis is between uterine sarcoma and carcinoma, adenomyoma, uterine and placental polyps, endometritis, hydatidiform mole and normal pregnancy.

The quantitative estimations of gonadotropic factor in the urine in chorio-epithelioma have been reported by Fels, Robert Meyer and Ehrhardt.

The prognosis has been pretty well covered in the discussion and is always grave, death usually supervenes in from 4 to 18 months, though there have been a few cases of temporary cures at least reported.

The treatment, if seen before metastasis, is by immediate hysterectomy followed by roentgen therapy, if the patient's condition justifies operation, if not roentgen therapy alone, with a grave prognosis in either event. The Aschheim-Zondek test should be repeated frequently for early metastases as this is the only known method by which such metastases can be detected.

Abdominal hysterectomy, and not vaginal, should always be performed for it has been clearly demonstrated by Cristofolletti & Hitschmann that trauma incidental to vaginal hysterectomy gives evidence of widespread metastasis which may influence a fatal prognosis.

CASE REPORT

This case is reported because of its rarity, being the only case on record, as far as I have been able to ascertain after a careful search of the literature, which presented a fully developed case of pemphigus complicating chorio-epithelioma. The patient was referred to me by Dr. J. A.

Elliott a prominent dermatologist of this city and he will shortly report the case from a dermatological standpoint.

Patient appeared in my office on September 7th, 1934, with the following history: Age 43, married 5 years, nullipara, July 31, 1932, she had a miscarriage passing a hydatidiform mole and a fetus at 6 months. Was curetted at the time to stop hemorrhage and obtain the remains of the mole. Five weeks later the Aschheim-Zondek test was positive. Curetted again on Oct. 19th, 1932, and the pathologist's report of the scrapings was negative for syncytial or Langhan's cells. The Aschheim-Zondek test was repeatedly positive for the next twelve months. Last test and examination was August 15th, 1933. This work was done by one of the leading obstetricians of our city and after this the patient drifted out of his hands. Two and a half months before she came to my office she reported that she had been examined by another obstetrician of this city who told her that her pelvis was normal. No hormone test was done by this examiner.

Examination of the pelvis by me on September 7th, 1934, the first day I had seen the patient, showed the uterus to be about the size of a small grape fruit, fairly round, hard and smooth. The cervix at this time looked and felt about normal though there was a cloudy jelly-like mucous discharge coming from the cervix and the patient had a mild leukorrhea. Cultures and smears sent to the laboratory on this date showed a scanty growth of a streptococcus in the cervical cultures. Ovaries were not definitely palpable but no tenderness or enlargement could be made out on either side. Patient said she had not had a regular menstrual period since her curettment in October 1932 and had been troubled somewhat with hot flushes. She had noticed a little dark discharge for a few months that looked like there might be some blood in it until March 1933 and had seen nothing at all since. No radium or X-ray had been used so this looked like the normal menopause. No backache or headache. Nocturia (2-3) always. The skin of the entire body, with the exception of most of the face and the palms and soles was covered with blisters from the size of a match head to the size of the end of the thumb. Dr. Elliott was taking care of the skin manifestations and referred her to me for pelvic examination.

No palpable glandular enlargement could be made out at this time. With the above history I made a tentative diagnosis of chorio-epithelioma of the uterus and advised immediate X-ray of the chest for metastases in the lungs. First picture made on the following day was unsatisfactory since the patient could not be persuaded to lie on the abdomen on account of the blisters and only one plate of the chest could be made. This showed very definite signs of metastases in both lungs, especially in the upper lobes, and less definitely outlined in the others. Next picture made on September 12th was not altogether as satisfactory as desired for the same reason but still showed definite signs of metastases. The picture on September 15th was definitely positive and the one made on October 2nd showed large metastatic areas in both lungs. The patient's skin condition

prevented any radical treatment and this condition grew rapidly worse until the end. Some of the blebs showed through on the X-ray plates which made it doubtful to some of the consultants whether these might not be casting the shadows which were faintly discernible in the lungs on the first plate, but these could be easily mapped out later on and showed definitely that the lesions on the skin and the ones in the lung were entirely separate.

The Aschheim-Zondek test done by Dr. Todd the next morning after I had seen the patient was positive and remained so throughout the course of the disease.

Physical examination of the chest revealed a normally functioning heart and lungs. Palpation, percussion and auscultation of the lungs revealed nothing abnormal. The urine was negative both chemically and microscopically. The white count was 11,800 and the reds 4,170,000. Wassermann was negative.

There is always a possibility of pregnancy in any enlarged uterus during the child-bearing period and after consultation I curetted the patient on September 11th, under gas anesthesia, and a very small amount of tissue was obtained. This was sent to the laboratory with the following report: ("Necrotic decidual cells; no chorionic villi or syncytium seen. No evidence of malignancy or pregnancy").

That neither syncytial or Langhan's cells were found by either of the pathologists who examined the specimen was due to the fact that the tumor growth had not broken through the uterine mucosa, as was definitely demonstrated at autopsy.

SUMMARY

The discovery of this case in an advanced stage with the concomitant pemphigus is of unusual interest.

The demonstration of metastases in both lungs in the beginning made the prognosis definitely fatal.

The Aschheim-Zondek test, using the Friedman modification, with one one-hundredth of the usual dose as used in the pregnancy test was positive from the beginning and remained so throughout the course of the disease.

The patient walked into my office for examination on September 7th and was immediately sent to the hospital where the disease progressed rapidly until the end five weeks later.

A complete post-mortem examination was done by Dr. L. C. Todd and will be reported by Dr. J. A. Elliott in his paper on pemphigus.

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SECRETARY LONG: The House of Delegates on Monday night, after hearing the report of Dr. D. W. Holt, Chairman of the Committee on Public Relations, thought his report was of so much import that he was asked to present it again to a General Session of the Society.

At this time we will have Dr. Holt give his report for the Public Relations Committee. (See page 86, House of Delegates.)

SECRETARY LONG: Mr. President and Gentlemen: Next is a paper by Dr. Carl V. Reynolds, Secretary of the State Board of Health, on "Syphilis and Its Control in North Carolina."

Dr. Reynolds! (Applause)

. . . Dr. Reynolds presented his prepared paper. . . (Applause)

SYPHILIS AND ITS CONTROL IN NORTH CAROLINA

By Carl V. Reynolds, M.D.,
Secretary and State Health Officer

Time moves on and one must keep pace and in step.

Changes are constantly being submitted, advances and mistakes are being made.

We must know the past to appreciate the present and to prepare intelligently for the future.

As time moved in our field of endeavor advances are well exemplified in pace in the elimination of smallpox, plague, typhoid fever, dysentery, hookworm, tuberculosis, etc.

Syphilis, "The King of Killers," "The Exterminator," "The Great Imitator," "The Ventriloquist," is a shining example of the failure to keep in step with progress, and history may well record our lethargy in seriously attacking a disease so devastating, yet with a known cause and known specific. It is controllable and it is curable. It is, however, distinctly encouraging that the name "syphilis" is no longer taboo, unspoken and unread. It is distinctly encouraging that the laity is fast becoming cognizant of its dangers, and the proper methods of control and treatment. It is encouraging that now history teaches us, and statistics clearly establishes the fact that syphilis is not controlled as a moral issue. It is encouraging to note that syphilis is treated now as an infectious disease, contracted by and through many avenues—the violation of the moral law is one source only. We are not now attempting to hold the disease within the immoral group, but admit that it attacks the moral and immoral alike.

Syphilis, the one outstanding disease that challenges the ingenuity of the medical profession and the public health officials looms up before us. What are we to do about it?

May I present to you, for your consideration, a plan for the control of syphilis set up at a Conference of State and Territorial Health Officers in Washington, D. C., April 7th and 8th, 1937. And, in this plan there will appear many suggestions that are the outcome of conferences held in oui State Health Department and with a Committee appointed by the President of the Medical Society of the State of North Carolina for the special consideration of a syphilis program.

The members of the Conference of the State and Territorial Health Officers, appreciating the great incidence and prevalence of syphilis and the possibility that this disease may be controlled through the application of modern knowledge, endorse the following public health principles and urge that they be applied by health departments in coöperation with the medical profession throughout the United States:

I. ADMINISTRATION OF THE PROGRAM

1. The Health Department of the State of North Carolina includes the provisions in its administrative organization as outlined by the State and Territorial Health Officers in that syphilis control work is integrated with the communicable disease division.

2. The program is directed by a full-time venereal disease control officer.

3. There is a local health advisory committee to the Health Department out of a selected group from the Medical Society of the State of North Carolina.

The State Health Department should establish a system of granting aid to cities in which health officers agree to carry on a syphilis control program approved by the State Department of Health. The standards to be maintained if approval is granted, cover all of the features of the program such as those pertaining to diagnostic facilities, treatment facilities, epidemiologic work and the educational program.

Functional control program includes the following:

"1. The Provision of Adequate Diagnostic Facilities.

"Adequate and universally available laboratory service for dark-field examinations and serologic tests is a first essential in the control of syphilis. While it is not deemed feasible or advisable to restrict the performance of the blood serologic tests to a central State Laboratory, it is believed to be sound public policy for the State to set standards for the performance of such tests, to control their accuracy, their continued specificity and sensitivity, and to see that conditions are maintained which are essential for accurate technic in sero-diagnostic work. For this reason, in addition to the fullest possible development of State laboratory facilities to supplement existing private facilities, it is recommended that a system of State licensure or approval for hospital, institutional, and other private laboratories doing bacteriologic, serologic, and other work of importance to public health be organized. The possibility should be borne in mind that under certain circumstances local private laboratories may be subsidized to advantage for the performance of laboratory work."

"State health departments should also aim to place at the disposal of every interested private physician or clinical group (a) the direct dark-field examination of secretions by a properly equipped laboratory administered as described above; and (b) *indirect dark-field examinations* (*capillary-tube method*) are made at the State laboratory." This service is available to every physician in North Carolina. Early diagnosis is most important.

"Studies conducted by the Public Health Service in the serodiagnosis of syphilis indicate the urgent need for periodic comparative evaluation of the performance of serodiagnostic tests for syphilis in all laboratories. Directors of laboratories performing such tests should have and should avail themselves of the opportunity of comparing their results with those

of well qualified serologists in other laboratories performing the same tests on comparable samples from known syphilitic and presumably non-syphilitic individuals. It is recommended that the system of comparative examination of serodiagnostic tests be continued to be extended annually to all State laboratories by the United States Public Health Service. In turn State laboratories themselves, if the performance of efficient serodiagnostic tests for syphilis within the several States is to be assured, should offer a similar opportunity to local laboratories.

An efficient serodiagnostic test for syphilis should possess a specificity rating of 100 per cent. Any test which yields even one per cent of false positive reactions should be so modified as to increase its specificity even with some slight sacrifice of sensitivity. The efficient serologic test for syphilis should also be sufficiently sensitive to detect at least two-thirds of the patients who have latent syphilis without regard to the previous administration of treatment." All of the thirteen tests in the first serodiagnostic study gave presumably false positive reactions on patients having malaria.

II. DEVELOPMENT OF TREATMENT FACILITIES

"The necessity for applying treatment in the control of syphilis makes the provision of adequate treatment facilities a measure of the utmost importance in the campaign.

The Committee agreed that clinic service and consultative advice and opinion should be available in urban areas for (a) the diagnosis and treatment of any patient who applies or is referred by a private physician, when necessary to protect the public health or the patient is unable to pay; and (b) any patient who is unable to afford private medical care.

No conflict between clinic and the physician in private practice need be feared with these restrictions, since the planning and development of these activities demand the closest continuous coöperation between the county, local and State medical societies and the health authorities, and since experience has shown that the patient able to pay for private medical care will not submit to the comparative inconvenience, delay and public exposure of clinic attendance."

"The major emphasis of the treatment program should be placed on the patient with infectious early syphilis, with the primary aim of reduction in the incidence of the disease. Late syphilis cannot be neglected, for humanitarian and, still more important, for economic reasons, but many clinics and physicians will find more time to care for the early syphilis case load if an organized effort is made to discontinue service for the over-treated patient with latent or late syphilis."

"In rural communities adequate treatment facilities for indigent patients may be achieved: (a) By subsidizing properly qualified local physicians; (b) by county health officers themselves, provided these health officers have had proper training in the clinical management of syphilis; (c) by subsidies to counties or communities for the transportation of

patients to the nearest center at which approved treatment may be obtained; (d) by the establishment of special treatment centers in rural communities in which large numbers of negroes are included in the population and in which it is desirable because of unusually high prevalence to supplement the efforts of local physicians; and (e) possibly by the development of a traveling health unit in which the necessary measures may be instituted for the prevention of the communicable diseases, including treatment of the venereal diseases."

"For the treatment of early syphilis, syphilis in pregnancy and latent syphilis the standards which have been set up by the Cooperative Clinical Group in cooperation with the United States Public Health Service are recommended for application throughout the country. The treatment of patients with late syphilis is a problem peculiar to each case. In late syphilis treatment cannot be standardized."

"In providing for transient and transferred patients, the original clinic should give all patients a statement or record of treatment received, as a factor in promoting the continuity of therapy. It is further recommended that an effort be made to cooperate in maintaining the continuity of the treatment schedules of patients who desire to return periodically to the care of their practitioners; that when their schedules appear faulty an effort be made to secure the cooperation of the practitioner in making recommended changes; and that failing such cooperation the treatment of the patient shall be continued in accordance with accepted public health standards."

III. APPLICATION OF EPIDEMIOLOGIC PRINCIPLES

"Each early case of syphilis should be investigated, the investigation to include a careful attempt to identify and locate the source of infection, as well as contacts prior and subsequent to infection, and to place such individuals as required under observation and treatment.

Case and contact investigations, although often difficult undertakings, are valuable case finding procedures and fully justify the labor and expense involved in making them. Analysis of the results of such investigations, as well as other epidemiologic studies, are greatly needed to add to existing knowledge of the disease. The physician in private practice should be urged to attempt to determine the sources of infection of early cases coming to his attention, and to encourage the bringing in of contacts for examination. It is felt, however, that efforts of the physician in this direction must in most instances be supplemented by official action. As syphilis constitutes a public health problem the rights of the community supersede the rights of the individual. This disease knows no class distinction. The same fundamental principles of control apply to the patients under the care of private physicians or public clinics. The application of case holding measures in lapsing patients is also of great importance. Forcible isolation may rarely be necessary for recalcitrant individuals.

Syphilis reporting should not be limited to the notification of early and potentially infectious cases. There is no limitation as to the stage of the disease or the duration of infection with which public health officials are concerned. It is highly desirable that a standard report form be developed suitable for nation-wide use.

IV. ASSISTANCE TO THE PRIVATE PHYSICIAN

Health departments may be of assistance to private physicians through the provision of the following services to them:

1. Free laboratory service.

2. Free drugs for the treatment of syphilis which shall have passed accepted standards of effectiveness.

3. Simple appropriate epidemiologic and morbidity reporting systems including forms which shall carry free mailing service.

4. Facilities for the hospitalization of their indigent and infectious patients who may require such care.

5. Other special assistance to advance the participation of the private physician in scientific and educational work."

V. LEGISLATION

EXHIBIT A:

AN ACT FOR PREVENTION OF VENEREAL DISEASES

Chapter 206, Public Laws 1919

Adopted by the North Carolina State Board of Health, Raleigh, N. C.

AN ACT FOR PREVENTION OF VENEREAL DISEASES

The General Assembly of North Carolina do enact:

Section 1. That syphilis, gonorrhea, and chancroid, hereinafter designated as venereal diseases, are hereby declared to be contagious, infectious, communicable, and dangerous to the public health. It shall be unlawful for any one infected with these diseases or any of them to expose another person to infection.

Sec. 2. Any physician or other person who make a diagnosis in or treats a case of venereal disease, and any superintendent or manager of a hospital, dispensary, or charitable or penal institution in which there is a case of venereal disease, shall make a report of such case to the health authorities according to such form and manner as the North Carolina State Board of Health shall direct.

Sec. 3. State, county, and municipal health officers, or their authorized deputies, within their respective jurisdictions are hereby directed and empowered, when in their judgment it is necessary to protect the public health, to make examinations of persons reasonably suspected of being infected with venereal disease, and to detain such persons until the results of such examinations are known; to require persons infected with venereal

disease to report for treatment to a reputable physician and continue treatment until cured or to submit to treatment provided at public expense until cured; and also, when in their judgment it is necessary to protect the public health, to isolate or quarantine persons infected with venereal disease. It shall be the duty of all local and State health officers to investigate sources of infection of venereal disease, to cooperate with the proper officials whose duty it is to enforce laws directed against prostitution, and otherwise to use every proper means for the repression of prostitution.

Sec. 4. All persons who shall be confined or imprisoned in any State, county, or city prison in the State shall be examined for and, if infected, treated for venereal diseases by the health authorities or their deputies. The prison authorities of any State, county, or city prison are directed to make available to the health authorities such portion of any State, county, or city prison as may be necessary for a clinic or hospital wherein all persons who may be confined or imprisoned in any such prison and who are infected with venereal disease, and all such persons who are suffering with venereal disease at the time of the expiration of their terms of imprisonment; and, in case no other suitable place for isolation or quarantine is available, such other persons may be isolated or quarantined under the provisions of section three, shall be isolated and treated at public expense until cured; or, in lieu of such isolation any of such persons may, in the discretion of the North Carolina State Board of Health, be required to report for treatment to a licensed physician or submit to treatment provided at public expense as provided in section three. Nothing herein contained shall be construed to interfere with the service of any sentence imposed by a court as a punishment for the commission of crime.

Sec. 5. The North Carolina State Board of Health is hereby empowered and directed to make such rules and regulations as shall in its judgment be necessary for the carrying out of the provisions of this act, including rules and regulations providing for the control and treatment of persons isolated or quarantined under the provisions of section three, and such other rules and regulations, not in conflict with provisions of this act, concerning the control of venereal diseases, and concerning the care, treatment, and quarantine of persons infected therewith, as it may from time to time deem advisable. All such rules and regulations so made shall be of force and binding upon all county and municipal health officers and other persons affected by this act, and shall have the force and effect of law.

Sec. 6. The North Carolina State Board of Health, through its officers, are hereby empowered and authorized to incur such expenses in the examination, detention, quarantine, and treatment of persons suspected of having, or having venereal diseases as in their judgment is necessary.

Sec. 7. The North Carolina State Board of Health shall submit to the county commissioners of the county in which persons suspected of having, or having, venereal disease, or suspected of having spread the disease, an itemized statement of expenses incurred in the examination, detention, quarantine, or treatment of such persons, and the county commissioners

shall, within thirty days after the receipt of such statement of expenses, pay to the treasurer of the North Carolina State Board of Health a sum equal to that expended.

Sec. 8. Any person who shall violate any of the provisions of this act or any lawful rule or regulation made by the North Carolina State Board of Health pursuant to the authority herein granted, or who shall fail or refuse to obey any lawful order issued by any State, county, or municipal health officer, pursuant to the authority granted in this act shall be deemed guilty of a misdemeanor, and shall be punished by a fine of not less than twenty-five dollars, nor more than fifty dollars, or by imprisonment for not more than thirty days.

Sec. 9. All laws or parts of laws in conflict with the provisions of this act be and the same are hereby repealed.

Sec. 10. This act shall be in force from and after its ratification.

Ratified this 10th day of March, A.D., 1919.

EXHIBIT B:

"AN ACT REQUIRING THE EXAMINATION OF DOMESTIC SERVANTS"

The General Assembly of North Carolina do enact:

Section 1. That hereafter all domestic servants who shall present themselves for employment shall furnish their employer with a certificate from a practicing physician or the public health officer of the county in which they reside, certifying that they have been examined within two weeks prior to the time of said presentation of said certificate, that they are free from all contagious, infectious or communicable diseases and showing the non-existence of any venereal disease which might be transmitted. Such certificate shall be accompanied by the original report from a laboratory approved by the State Board of Health for making such tests showing that the Wassermann or any other approved tests of this nature are negative. Such tests to have been made within two weeks of the time of the presentation of such certificates; and such certificate shall also affirmatively state the non-existence of tuberculosis in the infectious state.

Section 2. That all domestic servants employed shall be examined at least once each year and as often as the employer may require, and upon examination shall furnish to the employer all of the evidence of the condition of their health, as is set out in section one hereof.

Section 3. All laws and clauses of laws in conflict with this Act are hereby repealed.

Section 4. That this Act shall be in full force and effect from and after its ratification.

In the General Assembly read three times and ratified, this the 22nd day of March, 1937.

W. P. HORTON *President of the Senate*
R. G. CHERRY *Speaker of the House of Representatives*"

EXHIBIT C:

"A BILL TO BE ENTITLED 'AN ACT TO REGULATE MARRIAGE WITH RESPECT TO VENEREAL DISEASE, TUBERCULOSIS, AND IMBECILITY.'"

The General Assembly of North Carolina do enact:

Section 1. Article 2 of the Consolidated Statutes, relating to marriage license, is hereby amended by inserting after Section 2500 additional sections as follows:

"2500 (a). No license to marry shall be issued by the Register of Deeds of any county to a male or female applicant therefor except upon presentation by the said applicants of a certificate executed within seven days from the time of the presentation of said certificate to the Register of Deeds as hereinafter provided, showing the non-existence of any venereal disease which might be transmitted. Such certificate shall be accompanied by the original report from a laboratory approved by the State Board of Health for making such tests showing that the Wassermann or any other approved test of this nature is negative, such tests to have been made within two weeks of the time application is made for license, and such certificate also to state the non-existence of tuberculosis in the infectious state and that the applicant has not been adjudged by any court of competent jurisdiction an idiot, imbecile, or of unsound mind. Exceptions to this are permissible only under the conditions hereinafter named:

"(1). When the Wassermann or other approved tests are positive certificates may be issued and licenses granted *only* when both applicants are more than fifty (50) years of age and when both applicants sign an agreement to place themselves under competent medical treatment and supervision and to continue such treatment until cured of this disease;

"(2). When one or both applicants are less than fifty (50) years of age, and Wassermann or other approved tests are positive, certificates may be issued and licenses granted only when in the opinion of a regularly licensed physician sufficient treatment has been given to render either or both applicants incapable of transmitting this disease to others, and *only* when said applicants agree to continue treatment until discharged by the regularly licensed physician in charge of such treatment, as cured of the disease.

"(3). If either applicant has been adjudged by a court of competent jurisdiction an idiot, imbecile, or of unsound mind, license to marry shall be granted irrespective of the reaction of the Wassermann test or other approved tests *only* after eugenic sterilization has been performed on the female applicant, in accordance with State laws governing eugenical sterilization."

"2500 (b). *Certificate Executed by What Physicians.* That such certificate shall be executed by any reputable physician licensed to

practice medicine and surgery in the State of North Carolina whose duty it shall be to examine such applicants and issue such certificate. Certificates without charge may be obtained from the County Health Officer if applicants are unable to pay for examination."

Section 2. All laws and clauses of laws in conflict herewith are hereby repealed.

Section 3. This Act shall be in full force and effect from and after its ratification.

Note: The above Bill failed to pass the N. C. Session of the General Assembly of 1937.

In treated syphilis, for example, it would be permissible to state that the ordinary case could be considered temporarily non-infectious within *five* days after beginning approved treatment, provided there were no open lesions, and the treatment is continued without interruption under the specified public health precautions until a state of permanent non-infectiousness is attained.

VI. SPECIAL PROBLEMS

"Close relationship usually exists between the incidence of syphilis and the character of the population. The incidence of this disease is particularly apt to be inflated if the population group is an urban one or if the percentage of negroes in the population is higher than average. If success is to be attained in the control of syphilis special attention must be paid to the problem in urban areas and to the control of the disease among the negro population."

State and local health officers should see that the full benefit of modern syphilis control measures is extended to rural and urban residents alike. When municipal control programs are aided by State health departments infected individuals from surrounding rural areas who seek treatment in the municipality should be given the benefit of the services developed in the urban area.

VII. NEED FOR ADDITIONAL FINANCIAL SUPPORT

"The development of the campaign against syphilis is believed to be an equal responsibility of local, State and Federal Governments. All legislators responsible for the appropriation of public funds should be made fully acquainted with the huge extent of the syphilis problem and the possibilities for bringing the disease under control through the application of existing knowledge. It is the opinion of this Committee that the allotment of Federal funds will serve a most useful purpose by bringing forth new State and local appropriations if proper administrative policy is followed in making such allotments on a matching basis.

In a number of communities it has been clearly demonstrated that syphilis, like other communicable diseases, is distinctly and definitely preventable. In order to attain control it is necessary to improve Federal,

State and local health administrative organizations to the end that prevention, early diagnosis and continuous treatment shall be available for every citizen requiring such service."

If we could only visualize, one by one, the blessing bestowed upon us through medical and surgical science and laboratory research, we, the people, would, with one accord call it blessed.

The length of the span of life from twenty years to sixty-two—the exchange of pain, sickness and sorrow that lead to poverty, crime and degeneration—for health, happiness and prosperity has been achieved primarily through medical science, yet all are not availing themselves of those advantages.

The medical mind must devise the plan, and guide, direct, control, and promote its activities to best administer to the needs of the people.

In July, 1915, the writer read a paper before an audience of 350 mothers and potential mothers, the title of which was "Social Evil." It was said at that time that it was through false modesty and lack of knowledge that syphilis and gonorrhea are so extensive. Syphilis was called "syphilis" and gonorrhea called "gonorrhea."

Any offense to order, decency or health or injury to a third party, committed by prostitutes, constitutes a crime and is handled as such.

The diseased woman or man is treated, not as a criminal, but as one with a disease, and treatment is given and confidence gained and held until a crime is produced.

RECOMMENDATIONS

First—Abolition.

Second—Reporting of the social diseases by number.

Third—Reporting of the social diseases by name and address if the patient discontinues treatment before a cure is made.

Fourth—Establishment of a dispensary for the voluntary treatment of the male and female.

Fifth—Establishment of wards in hospitals for the treatment of the incapacitated.

Sixth—Establishment of proper places for the treatment of criminals.

Seventh—Laboratory diagnosis.

Eighth—Raising age of consent to 21.

Ninth—Education of the public and the children.

Tenth—Abolition of the public drinking cup, soap and roller towel.

In 1920, as President of the Medical Society of the State of North Carolina, under title "MEDICAL LEGISLATION" the writer made the following observations:

1. Yet, may I ask, have we not neglected our greatest asset to man in awaiting his call for aid and then attempting a cure, rather than anticipating his ills and preventing his calls. We advise how to get well where we should advise how to keep well.

2. Medicine, as an applied science, has through individuals, rather than a collective effort, made marvelous advances through her various avenues of research; this reward of merit through individual attainment should not be lost.

3. Then it behooves us for the sake of self preservation, if not for the higher motive, the preservation of humanity, to have a strong committee to watch, plan and outline, for those who are endeavoring to pass Medical Legislation, that we may guide their efforts in the proper way. Never before did we need, as we do now, intelligent leadership.

4. Experience has taught us something and we should awaken, ere it is too late, and realize that certain fundamental changes are to be made, and that this is necessary to society, before we are embarrassed by having our duties poorly done by incompetents.

5. Our already accumulated knowledge, if awakened and put into active service, can reduce sickness and accidents one-half. The philanthropists, the politicians and the people at large have this interesting knowledge—made possible for them by us, and given to them by our press. Do you think for one moment that they are going to sit idly by and see this vast waste of human life?

6. Our individual problems may cause us to sit idly by, forgetful of, or, with indifference to, the greater problems of the community, the state, or the United States health program and we will suffer the consequences of the inactive, thoughtless, indifferent citizen, and suffer in consequence of our inactiveness.

7. The physician is still an individual, and deals with his patient as an individual, failing to recognize that community interest must and should be conserved, even at a loss to the individual for the good of many.

In closing, may I be so presumptuous as to request the 100 per cent cooperation of the medical profession in combating, and in a united effort to exterminate one of our greatest evils, SYPHILIS.

President Strosnider: Gentlemen, it is now eleven-fifteen and the next business will be at eleven forty-five, when the election of two members of the State Board of Health will take place. We will therefore recess at this time until eleven forty-five, to transact this business, and immediately following that we will have the Conjoint Session of the Medical Society of the State of North Carolina and the State Board of Health.

. . . A recess was taken until eleven forty-five o'clock. . .

President Strosnider: The meeting will come to order, please.

The next item on the program is the election of two members of the State Board of Health for a term of four years. The members whose terms are expiring from the present Board are Dr. Craig of this city, who is president of the Board and Dr. W. T. Rainey of Fayetteville. If there be no objection, after the nominations are made, and as the balloting proceeds, the two highest men will be voted on each time; the lowest man, if there are more than two, will be eliminated, unless there are objections.

I will ask Dr. Karl B. Pace and Dr. John Knox—if he is in the room—to serve as tellers at this particular time.

Nominations are now in order to fill these vacancies.

Dr. Wingate M. Johnson (Winston-Salem): Mr. President, I would like to place in nomination our fellow-townsman and good friend, a man who has already proved his worth on the Board by being elected president, Dr. S. D. Craig. (Applause)

Dr. J. F. Highsmith (Fayetteville): Mr. President, I would like to place in nomination a man who has served on the Board, by the name of Dr. W. T. Rainey. Dr. Rainey has given good service, as I have been reliably informed. He is a good man in every respect. You will make no mistake in returning him to the Board at this time. He has been at school long enough to learn what it is all about. I feel that in the next four years he will be in a position to do even better work than he has in the last two years.

Therefore, I hope that you may see fit to return Dr. Rainey to this position. (Applause)

Dr. Paul H. Ringer (Asheville): I second the nomination of Dr. Rainey.

Dr. C. D. Thompson (High Point): I second the nomination of Dr. Craig.

Dr. George T. Mitchell (Wilkesboro): I would like to second the nomination of Dr. Rainey.

Dr. I. H. Manning (Chapel Hill): Mr. President, may I have the privilege of seconding the nomination of Dr. Craig?

Dr. Carl W. Bell (Raleigh): I second the nomination of Dr. Craig.

Dr. D. M. Royal (Salemburg): I would like to second the nomination of Dr. Rainey.

President Strosnider: Gentlemen, are there further nominations?

Dr. S. W. McFeeters (Goldsboro): Mr. President, I venture to place a name in nomination. There is an element of audacity, if not of presumption, in my placing the name of William Allan in nomination, but I wish to do so at this time.

I have known him since he was a boy, rowed on the same crew with him, went through the same classes with him. I went to the same college with him. I have observed his actions as a man—and he is a man. He is a man who has a deep rootage in the soil of this American scene.

This is going to be a speech, gentlemen, if length of words makes a speech.

He and his forebears have striven worthily, and often eminently, to make this a better place for you and me to live in. He is a doctor, and the word gains dignity by reason of the fact that he is one. At a time when medicine was empirical and somewhat confused in its procedure, he ven-

tured to be scientific, and dared to be. He has continued to be a scientific medical man. While I am not in a position to appraise the merit and the achievements of our North Carolina doctors, I venture to say that Bill Allan's name at present stands high. I doubt if any stands higher.

North Carolina's doctors are not, I think, to be charged with ingratitude, though sometimes the expression of their gratitude is somewhat dim. I do not believe that Dr. Allan has had the formal recognition from his fellow-physicians that he deserves, and that they desire. I think Dr. Allan would serve eminently and devotedly, and usefully, if placed on the Board of Health. His election would afford an opportunity to give him formally the recognition that I am sure you give him in your hearts.

We need a man like Bill in these times. Bill is somewhat like the mountains in which he was bred. We are in the midst of confused, conflicting, sometimes corrupting, and often contemptible ideologies. Bill will not be moved except on his own orders, or higher orders.

Gentlemen, I venture to place in nomination the name of William Allan. (Applause)

Dr. F. M. Houser (Cherryville): Mr. President, Gentlemen: I would like to second the nomination of Dr. Bill Allan from Charlotte. I have known Dr. Allan for the past seven years. He is a scientist, a physician. He is interested in our health, and I think he would make us one of the most splendid men that we could put on the State Board of Health. I would like to see Dr. Allan on that Board. I believe that he would accept the nomination, and I know he would make a member of whom we would all be proud. I would like to see Dr. Bill Allan from Charlotte placed on the State Board of Health. (Applause)

President Strosnider: Gentlemen, are there other nominations? If not, are you ready for the nomnaitions to be closed?

. . . A motion was duly made and seconded that the nominations be closed. . .

President Strosnider: All those in favor of the nominations being closed say "Aye"; opposed, "No."

. . . Motion carried. . .

Prepare your ballots.

The secretary will read the nominees.

Secretary Long: Dr. S. D. Craig of Winston-Salem was nominated. Dr. W. T. Rainey of Fayetteville has been nominated, and Dr. William Allan of Charlotte has been nominated.

President Strosnider: In preparing the ballots, vote for two out of three. The two who get the most votes will be elected.

Secretary Long: I am instructed by the Chairman to tell you that you can write these names on prescription blanks or any piece of paper you have, if you haven't a ballot from the tellers.

President Strosnider: Will Dr. Roy Norton and Dr. Paul Ringer assist the tellers in collecting and counting the ballots, please? Dr. Cooke has been appointed one of the tellers instead of Dr. Roy Norton.

Will the tellers please collect the ballots?

Secretary-Treasurer Emeritus McBrayer: Mr. President, as far as I am able to judge the balloting hasn't been closed yet.

The President would like the tellers to report here so they can receive instructions, and let some of us vote who have been waiting for them to come by for ever so long. If anybody knows where they are, I move that the President be requested to send someone to find them.

President Strosnider: Dr. Perry, will you find the tellers and have them report to the desk?

I now declare the ballot closed. The tellers will proceed to count the vote. (The ballots were counted.)

The Secretary will now announce the result of the ballot.

Secretary Long: Dr. S. D. Craig, 138, Dr. W. T. Rainey, 122, Dr. Allan, 59. (Applause)

President Strosnider: The Chair declares Dr. Craig and Dr. Rainey elected to serve a four-year term on our State Board of Health. (Applause)

The next business before the house is the conjoint session of the Medical Society of the State of North Carolina and the Board of Health. I will ask Dr. Long to escort Dr. Craig, president of the State Board of Health, to the Chair. Is Dr. Craig in the room? (Applause)

. . . The meeting thereupon adjourned. . .

CONJOINT SESSION OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA AND THE STATE BOARD OF HEALTH

Wednesday Morning, May 5, 1937

The meeting convened immediately following the Second General Session, Dr. Craig presiding.

Chairman Craig: Gentlemen, I certainly appreciate the honor of being re-elected to the Board. I hope I can be of some service.

We will now call to order the Medical Society of the State of North Carolina and the State Board of Health conjoint session.

We will now have the report of Dr. Reynolds, secretary and treasurer of the State Board of Health.

Dr. Carl V. Reynolds: Mr. Chairman and Gentlemen: You heard me a few minutes ago on the subject of syphilis and its control in North Carolina. In order to get it before you in the General Session I probably trespassed on your time so I thought at the Conjoint Session we would simply present the remaining portion of our report by title, and I so now

offer it: "The Annual Report of the North Carolina State Board of Health to the Conjoint Session State Medical Society, May 5, 1937."

. . . Dr. Reynolds then read the first page of his prepared report, after which he made the following remarks. . .

Dr. Reynolds: Now I have, and will present for the record, the departmental reports, Division of Preventive Medicine, Division of Oral Hygiene, Division of County Health Work, Division of Industrial Hygiene, and Division of Epidemiology.

I am glad you don't have to listen to the reading of this, but I advise you to read it please, when it comes out in the Transactions so you will become cognizant of what your State Board of Health is doing. There are also the Division of Sanitary Engineering, Division of Vital Statistics, Division Laboratory of Hygiene. That concludes the divisions.

I present these matters for your record and publication. (Applause)

ANNUAL REPORT NORTH CAROLINA STATE BOARD OF HEALTH

TO

CONJOINT SESSION STATE MEDICAL SOCIETY

Carl V. Reynolds, M.D.,
Secretary and State Health Officer

May 5, 1937

In this annual report to the Conjoint Session it is my purpose to again deviate from the usual formal report of the activities of the various divisions of the Health Department during the year.

It is deemed wise and appropriate to discuss with you "Syphilis and Its Control in North Carolina."

It is hoped that we may have a free and open discussion in that we may have your constructive criticism and advice before the plan is placed definitely into effect.

Accompanying, and as a part of the North Carolina State Board of Health's Annual Report to the Conjoint Session with the State Medical Society, there is a report of the activities of the various divisions.

The directors, with aid from their efficient and ambitious personnel, have done an outstanding and progressive piece of work, and deserve commendation from us all.

Departmental Reports:

DIVISION OF PREVENTIVE MEDICINE

The Division of Preventive Medicine under the direction of the Assistant State Health Officer, Dr. G. M. Cooper, in addition to the regular routine of editorial work, consultant service in administrative

work, etc., has been responsible for the execution of the maternal and child health and crippled children's service of the Board.

Maternal and Child Health Service: Since the last report one year ago, working with funds allotted by the United States Children's Bureau, Maternity and Infancy Centers have been established in 42 counties. On April 1, a total of 122 such centers were in operation. With the exception of those in the cities of Charlotte and Fayetteville, and in Robeson County, all represent newly established work. A local physician is in attendance with a special public health nurse. Most of the centers are open one day in a month, but in some the attendance justifies weekly meetings. We have recently been paying out direct to local practicing physicians as honoraria for services in these centers about $1200.00 a month.

The admittance is restricted to expectant mothers of the poor. They are given prenatal examination by the physician and the nurse keeps in touch with them until confinement. A Wassermann is done on every first case as a routine measure. To date, between ten and twelve per cent have been reported positive. A total of nearly 5,000 women have received a medical examination in these centers, and about the same number of babies.

It is a well baby center and advice is confined to problems of feeding and general infant care. When the ante-partum mother or a baby is found in need of medical care, the nurse makes an effort through the welfare officer to have such care provided. It should be a movement, eventually leading to the provision of competent medical service during the prenatal period, at confinement and through the post-partum weeks, for every confinement case.

Crippled Children's Service: The work for Crippled Children has been inaugurated also within the past year. Up to April 1, diagnostic and treatment services had been established in 18 clinics. Some of these were old centers which are strengthened financially and some are new enterprises. Nine of the physicians who practice orthopedic surgery exclusively have been cooperating in the conduct of these centers. Twenty-six general hospitals providing a total of 85 beds are now being utilized. A total of about 10,700 crippled children have been located, and by June 30, about one thousand children will have had treatment and hospital care provided.

DIVISION OF ORAL HYGIENE

The outstanding feature of our Mouth Health Program is the recognition it has received throughout the nation during the year now closing.

There is no question in our minds that the reduction of the incidence of degenerative diseases is the next place of attack for Public Health. If this is to be accomplished in a creditable manner, Public Health must take into consideration the mouth as a source of infection. In this phase of Public Health work, North Carolina is a pioneer and the work that we are doing in teaching Mouth Health is, as said before, attracting nation-wide attention.

The Division of Oral Hygiene of the North Carolina State Board of Health conducts, so far as we know, the only program in which Mouth Health teaching is carried into the public schools by trained dentists. We now have on our staff twenty-two school dentists. We also have a puppet show playing in the schools. The dentists go into the schools and teach Mouth Health didactically. They also make the necessary dental corrections for the indigent children and refer those who are able to take care of their own dental needs to dentists in private practice. This is, as you will see, relieving the dentist of an enormous charity practice load. It is reminding many mothers to take their children to their own family dentists, which, of course, is appreciated by the dentists. It is reducing the repeater load in the schools. Most important of all, it is promoting health.

DIVISION OF COUNTY HEALTH WORK

During the last year, full-time local health service has been established in Cherokee, Clay, and Harnett Counties. Four additional counties have signified their intention of establishing full-time health service by July 1st, namely, Burke and Caldwell in a district service, Hyde in a district service, and Stanly as a county unit. When these services are established, there will be fifty-nine of our one hundred counties provided with full-time health service.

In the fifty-five counties in North Carolina having some type of full-time health service, there are employed at the present forty-eight Health Officers, one hundred and thirty-three Public Health Nurses, seventy Sanitary Inspectors, fifty-five Clerks, six Technicians, five Dentists, eleven other Medical Officers, and four others. A total of thirty-six dental programs are being provided in these health services.

All of the new personnel that has been provided through Social Security funds and increased local appropriations have had special courses of training to qualify them for the positions they are now filling. Within the fiscal year July 1, 1936 to June 30, 1937, there will have been a total of ninety-four persons trained for public health positions, namely, eight Health Officers, eight Sanitary Engineers, fifty-six Public Health Nurses, nineteen Sanitary Officers, and three Laboratory Technicians. All of these will have been placed by July 1st in some section of our State. This personnel has been trained in the Division of Public Health at the University of North Carolina, George Peabody College for Teachers, the Richmond Division of the William and Mary College, the St. Phillips Division of the Medical College of Virginia, Johns Hopkins University, University of Michigan, and the Maternity Center Association in New York City.

Not all of this personnel has been new personnel. An opportunity has been given for a few to take refresher courses. As time goes on, it is hoped that this opportunity will be granted to more and more of our public health workers in order that we may improve the type of health service being rendered to the people in our State.

Upon the completion of the training courses, all North Carolina trainees are assigned to the field training center which has been designated as the Durham City-County Health Department and the Orange-Person District Health Department. Personnel is assigned to this field training center for a period of one month to acquaint them with the public health practices and laws of the State of North Carolina.

Advisory service to local health units was established during last year. This consultant service has been in full operation since July 1, 1936 and has already demonstrated its usefulness in stimulating increased interest on the part of local health workers, and we believe the type of service being rendered in the local health units through the cooperation of the local workers is nearer what it should be than has been possible for us to accomplish heretofore.

DIVISION OF INDUSTRIAL HYGIENE

This division has lent most of its efforts during the past year to the investigation of siliceous dust hazards, these having been decided upon as probably constituting the chief occupational disease problem in the State at this time.

The two physicians and the engineer spent six weeks during May and June in Washington, D. C., attending a seminar on industrial hygiene given by the Division of Industrial Hygiene of the United States Public Health Service. This school was attended by approximately thirty-five engineers and physicians from state boards of health.

After the return from Washington, the department personnel spent some time in organization work, in the planning of activities for the immediate future, in the selection of equipment, and in the preparation of reports.

We have been making a physical and X-ray examination prior to employment and at intervals after employment on each worker in those industries having a siliceous dust hazard. There are approximately two hundred such plants, and to date more than three thousand such examinations have been made. Many of those examined were found to need medical attention of one kind or another, and such cases were urged to consult their local physician. A number of new cases of tuberculosis as well as of asbestosis, silicosis, and pneumoconiosis.

The engineering phase of industrial hygiene is of equal importance to the medical since the solution of the problem of occupational diseases lies in the proper application of engineering methods for the control of the various hazards. This division has on its staff a chemical engineer especially trained and equipped for this type of work. He has made, during the past year, an evaluation of the workroom environment in 8 iron foundries, in the mine and mill of a pyrophyllite producing company, in the carding room of a cotton mill, in 5 rock quarries, and in a newspaper plant. Such studies have resulted in the following accomplishments:

126 dust counts in 8 foundries
28 dust counts in the mine and mill of a pyrophyllite producing company
6 dust counts in the carding room of a cotton mill
70 dust counts in five rock quarries
5 samples of atmospheric particulate matter collected for lead determination

Extensive engineering reports were prepared on two foundries. Included were detailed recommendations for exhaust ventilation systems illustrated by mimeographed sketches.

A variety of miscellaneous work has been done and investigations not included in this report have been made by both the medical and the engineering personnel.

Within the next few months we will have collected sufficient data in several of the industries to be able to make specific recommendations for the control of whatever dust hazard there is. When these recommendations are put into practice they will result in the protection of many workers from the ill effects of dust and complicating tuberculosis.

DIVISION OF EPIDEMIOLOGY

Early in the period of time covered in this report the outbreak of vulvo-vaginitis in the schools of Sampson County assumed such proportions that Dr. Otis L. Anderson of the U. S. Public Health Service was assigned to make a study of the situation, assisted by a technician from Rochester University who did the culture work at the State Laboratory of Hygiene. This study, completed the latter part of July 1936, failed to reveal the gonococcus as the etiological agent. It is felt that perhaps these negative findings were influenced by the fact that the examinations were made during the chronic phase of the vulvo-vaginitis outbreak.

In 1936, two food poisoning outbreaks were investigated by this Division, in June and October respectively. Both were characterized by acute gastrointestinal symptoms (nausea, vomiting, diarrhea) within one to four hours after eating meat products. Symptoms subsided within six or eight hours and patients completely recovered within 48 hours. Laboratory examinations revealed no conclusive findings. Clinical and epidemiological findings suggested staphylococcus food poisoning.

In July, 1936, The Russell Soundex filing system was installed in this office for the handling of tuberculosis report cards. This code system has eliminated, to a great extent, duplication and difficulties in tracing cases for follow-up work. In 1935, before this improvement, 1996 tuberculosis cases were reported, whereas in 1936 after the system was installed, reported cases increased to 3008.

In August, 1936, the State Board of Health, in regular meeting adopted a revised form of Rules and Regulations Governing the Control of Communicable Diseases in North Carolina. This bulletin includes all except

rules and regulations for the control of the venereal diseases, which are under consideration separately by the Board.

The hookworm survey, begun in North Carolina by the Rockefeller Foundation in cooperation with the State Board of Health and Vanderbilt University Medical School in 1935, was completed in December 1936. Examination of specimens is not complete, but tentative analysis and tabulation of reports received thus far from Vanderbilt indicate that approximately 11.9 per cent of specimens examined have been found positive for hookworm infection, as compared with 29.8 per cent positives revealed by the 1910-1914 Rockefeller Foundation survey in this State.

This Division has begun querying each case of diphtheria reported in an effort to find out if the patient has been previously vaccinated against diphtheria, with the hope of securing information of value in evaluating the efficacy of diphtheria toxoid. Approximately 74 per cent of queries sent out to date have been returned with the desired information. This is gratifying and quite unusual for routine investigations.

In October, 1936, Dr. G. M. Leiby was employed as Venereal Disease Consultant in this Division to carry on the educational program outlined for venereal disease control. Since his employment he has given illustrated lectures before high school and civic groups throughout the State. In counties with full-time health service he has worked through those departments and in counties without such health service he has appeared under the sponsorship of civic or school groups. Since his employment he has appeared before approximately 27,000 boys and girls of high school age, approximately 10,000 college students, and approximately 13,000 adults.

There was arranged early in 1937, in cooperation with the State Department of Public Instruction, a State-wide series of conferences with high school science teachers for the purpose of integrating basic information on syphilis with the science course already taught in the public schools. Approximately 1600 teachers have been contacted at these conferences. It is estimated that each teacher represents the contacts of approximately 80 students; therefore, potentially 80x1600 or 128,000 students should learn something about syphilis during this school year if teachers grasp the opportunity in their class rooms. About one per cent of science teachers already are doing a good job of presenting the subject. It is felt that as a result of these conferences at least 20 per cent more science teachers will cooperate.

In December, 1936, the Division Director and Venereal Disease Consultant from this office attended the Surgeon General's Conference on Venereal Disease Control in Washington, D. C. Prior to this Conference the Division Director was appointed Chairman of the N. C. State Medical Society's Committee on Syphilis Control, and a full report of the Committee's recommendations on procedures and policies relating to syphilis control in this State was presented to the Surgeon General at that Conference.

In January, 1937, Dr. William F. Snow, Consultant with the U. S. Public Health Service, worked with the Division Director for several days revising the rules and regulations governing the control of venereal diseases in this State. It is expected that this revision, now under consideration by the Board members, will be adopted at its next regular meeting.

Of great interest to this Division was the appropriation by the 1937 General Assembly of $25,000 for each year of the biennium for venereal disease control. It is intended that $10,000 of this sum shall be used to purchase drugs for treatment of indigent syphilitics, and it is expected that the money will become available July 1st, 1937, at which time this control program probably will be considerably expanded, especially through additional clinic facilities.

Also of importance to this Division was the enactment by the 1937 General Assembly of a law requiring all domestic servants to be examined at least once a year in order to present to their employers certificates showing them to be free of infectious tuberculosis and/or syphilis. It is felt that this will reveal many syphilis cases now unknown.

Aroused public interest in syphilis control already has reflected itself in greatly improved reporting of syphilis to this Division. In 1936 there was a 20 per cent increase in the number of reported cases of syphilis as compared with 1935. In the first quarter of 1937, 100 per cent more cases were reported than were reported in the corresponding or first quarter of 1936. It is also gratifying to report that of the cases of syphilis reported to this office in 1936, 78 per cent identified the patients by name, making it thus possible to do epidemiological investigations where the physician requested it.

This Division recently has sent to every City, County and District Health Department in the State, a questionnaire designed to obtain certain specific information as to present clinic facilities, particularly with reference to plan of treatment, budget, follow-up work, investigation of source of infection, plan of operation, etc. This information, when secured, probably will form the basis for future plans of this kind for the State.

This Division has just completed sending to all physicians of North Carolina copies of the venereal disease law, the U. S. Public Health Service bulletin "Standard Treatment Procedure in Early Syphilis," and a circular advertising the Public Health Service publication "Venereal Disease Information," which is considered valuable for reference in this work.

In addition to the specific activities herein reported this Division has carried on the usual routine work of tabulating and recording reports of communicable diseases, making weekly and monthly reports, and handling correspondence.

DIVISION OF SANITARY ENGINEERING

In the Division of Sanitary Engineering, the past year has been characterized by a gradual resumption of routine duties following rather feverish activities in cooperation with Federal Relief Agencies.

In the major fields of water works and sewerage, final working drawings have been reviewed, revised, and finally approved for new water works and new sewer systems for the following towns: Morven, Hemp, Fuquay Springs, Candor, and Pilot Mountain. Plans for water works alone have been approved for Mt. Gilead, Whitakers, Yanceyville, and Stanley, and plans for new sewer systems alone have been approved for Burgaw, Mt. Pleasant, West Jefferson, and Benton Heights. Plans for new sewage treatment plants have been approved for Hemp, Greensboro, Mt. Pleasant, and Albemarle, and plans for new water filtration plants have been approved for Spray and Draper. Sewage treatment plant plans for approximately 75 schools and institutions have been approved during the past year, and plans for swimming pools have been approved for Chapel Hill, Winston-Salem, Sylva, Charlotte, Black Mountain, and High Point.

During the past twelve months routine supervision of dairy sanitation has been resumed. Special assistance has been given to 33 retail-raw dairies by means of plans, drawings, and sketches for remodeling and improving their dairies. Likewise, 20 pasteurizing plants have been assisted by means of plans for remodeling and improving their plants.

The work of the Division of Sanitary Engineering in supervising relief labor, engaged in Community Sanitation and Malaria Drainage Work, has increased materially during the past twelve months over the previous twelve months. A year ago the State Board of Health was able to report the construction of 18,713 privies built during the previous twelve months with Federal Relief labor. This year a total of 32,528 privies have been constructed in North Carolina by means of relief labor. This brings the total number of privies built by Federal Relief labor in North Carolina to over 102,000 to date. This would be enough, if placed side by side, to form a solid line over 116 miles long. It would be equivalent to a solid line of privies from the Virginia line through Winston-Salem and Charlotte, on down about two miles into South Carolina. The cost of the relief labor alone on these sanitary privy projects averages about $13.00 a privy, while the cost of material averages about $15.00 a privy. This means that during the year just past over $900,000 has been put into circulation for wages and material in this work alone. The average number of men employed on Community Sanitation work has been slightly in excess of 900.

Malaria Control Program: Between the period May 1, 1936 and April 30, 1937, there has been expended an estimated amount of $866,000.00 in North Carolina for malaria control drainage projects which are actively supervised by the Malaria Control Section of the State Board of Health. Of this total expenditure some $706,600.00 has been expended by the Works Progress Administration. The remaining amount was contributed by municipalities and persons locally interested in certain projects and by the U. S. Public Health Service and the State Board of Health. These funds have made it possible to construct more than 600 miles of canals and ditches which have drained off approximately 9550 acres of swamps,

ponds or other breeding places for the Anopheles, or malaria-carrying mosquito. All of this work has been carefully supervised by the five district Supervisors and one Assistant State Director, who are actively engaged in the Malaria Control Section of the State Board of Health.

Work has been carried on in 43 counties, distributed throughout the eastern two-thirds of the state with the heaviest concentration of work of course being in the eastern and southeastern sections, where the problem is greatest. In the report made at this time last year, several of the larger projects were mentioned, particularly the one lying in Rowan and Iredell Counties. This project is still under construction, however, one of the three larger sections has been completed and the vast majority of the heavy work on the other two sections has been done. Likewise the large project located in Forsyth County has been completed and closed. The completion of the Forsyth project will be of vast malaria control benefit to the entire rural area surrounding it. Another relatively large project was started early in the fall of 1936 in Robeson County. When completed it will remove the principal malaria menace from the town of Red Springs, North Carolina, and a large rural area.

During the past calendar year there has been a marked increase in the number of malaria deaths reported, however, it is very gratifying to notice that in areas surrounding large malaria control projects, there has been a marked decrease in a number of cases.

The work which has been carried on during the year is calculated to have benefited approximately 300,000 persons by removing all or a part of the Anopheles mosquito breeding area from near their dwellings.

Great difficulty has been experienced in ascertaining the exact malaria problem in the state since it is not a reportable disease at the present time. It is hoped that in the very near future, North Carolina will follow in the footsteps of other southern states by making malaria a reportable disease and in this way make it possible to determine more accurately the extent and magnitude of the malaria problem. In this way, we will be able to tell exactly how effective anti-malaria work is and concentrate our efforts in places where it is needed most. At present the only method available for determining the location and extent of the problem is by local inquiry of practicing physicians and by interrogating local druggists and storekeepers who dispense quinine, "chill tonics" and other drugs used in the treatment of malaria.

No interruption is anticipated in the present malaria control program and it is believed it will continue with WPA assistance for some time in the future. A great deal of valuable work has already been done but the problem is still great and much more work is needed.

One of the major activities of this Division has been an intensified hotel and cafe inspection program. This has involved the making of approximately 7,500 hotel and cafe inspections during the past year, largely in cooperation with local sanitarians. This has resulted not only in a marked

sanitary improvement of our hotels and cafes, but has been reflected indirectly in improvement in dairy sanitation in those counties where the hotels and cafes formerly used ungraded milk.

One special piece of work undertaken was that of a State-wide school survey attempted largely through the Social Securities Fund in the unorganized counties, and through the cooperation of the county sanitarians in the organized counties. This school survey is not quite completed in the organized counties, but a sufficient amount of work has been done to indicate that while there has been some improvement in school sanitation during the past six years, at the same time our school sanitation in North Carolina is still at a very low ebb.

The recent Legislature has seen fit to impose upon the State Board of Health the further duty of sanitation of our meat markets and abattoirs. This does not in any way involve meat inspection work, which, as heretofore, is left entirely with the Department of Agriculture. In administering this new law, it is hoped to integrate it closely with the hotel and cafe work by not only grading meat markets and abattoirs from the standpoint of sanitation, but also considering the quality of meat used in the hotels and cafes in the future grading of these food establishments.

DIVISION OF VITAL STATISTICS

The health condition of North Carolina for 1936 as indicated by the number of deaths was very satisfactory. Deaths from the majority of the preventable causes, with a few exceptions, continued to show some decrease over last year. The slightly higher total death rate was due principally to the increasing number of deaths from such causes as heart and kidney diseases, cancer, diabetes and other non-infectious conditions.

For the year, the Bureau of Vital Statistics recorded 76,869 births and 35,834 deaths. This represents a birth rate for the year of 22.2 and a death rate of 10.4 per 1,000 population. The birth rate was somewhat lower and the death rate slightly higher than for 1935, but there were 40,000 more births than deaths which would indicate in general a healthy growing population.

There were fewer deaths from typhoid and para-typhoid fever than for any previous year, the total being 76, which represents a rate of 2.2 per 100,000 population. Less than one-half as many deaths were charged to whooping cough as for the year before. 1936 was the fifth consecutive year in which no deaths from smallpox were recorded. Deaths from diphtheria increased from 168 in 1935 to 190 in 1936, and tuberculosis, influenza and pneumonia likewise showed a small increase. Deaths from puerperal causes decreased from 554 to 499 and infant deaths decreased by more than 200.

The routine work of the Bureau has become heavier due to the increased demand for certified copies of birth certificates to be used in connection with Social Security benefits and for verification of date of

birth for admission to school, for work permits, and for other uses. In order to do this increased volume of work, it has become necessary to employ through social security funds an additional general clerk.

During the year the Bureau of Vital Statistics in cooperation with the Bureau of the Census began sending notification of birth registration certificates to the parents of all children whose birth was recorded since July 1, 1936. In addition to its value to the parents and to the child, it is hoped that this notification will stimulate birth registration. In order to further improve registration, the Bureau of the Census loaned the services of Dr. H. G. Williams to this Bureau from September through December. Doctor Williams traveled over approximately one-third of the State, interviewing physicians, midwives and undertakers and instructing the local registrars in the performance of their duties, and doing other types of general promotional work.

1936 was the last year of a five year study of maternal mortality. The results of this study are now in the process of being compiled. The Bureau of Vital Statistics wishes to express its appreciation for the physicians' hearty assistance in this valuable study, and at the same time to express the desire that all physicians record their birth certificates promptly and make as accurate a statement on the death certificate as to the cause of death as possible. Without this prompt and accurate certification, the records of the Bureau can not be of as great value to physicians and to health departments as is otherwise possible.

DIVISION LABORATORY OF HYGIENE

The rapidly increasing volume of work demanded of the State Laboratory of Hygiene has tested the capacity of the Laboratory to the limit. Its major activities have increased more than 60 per cent during the past year while its expenditures are only 25 per cent greater.

Bacteriological examinations have increased approximately 50 per cent. Since the effective control of infectious diseases depends to a considerable extent upon early recognition of potential sources of infection, we have endeavored to encourage Laboratory procedures which would make possible early diagnosis. In the case of typhoid fever we have urged that specimens from suspected patients be sent for blood culture, if the patient is seen in the early stages of the disease by his physician. Reliance should be placed upon agglutination tests only during the latter stages of the disease. In 1936 specimens for blood culture were sent from 96 of the 100 counties.

Of all the procedures intended to aid physicians in making a diagnosis the sero-logical tests for syphilis take first place. More than 140,000 specimens have been received by the Laboratory during the last twelve months. Each of the 100 counties sent specimens. Whenever possible, we have performed the Wassermann Test and the Meinicke Clarification Reaction No. 2 on these specimens. A little more than 16 per cent of the

Wassermann Tests were positive and of 36,000 Meinicke Tests 18 per cent were positive. The antigen for the Meinicke Test has been adjusted so as to make it more sensitive than our Wassermann.

The Laboratory has participated in the Second and Third Sero-diagnostic studies conducted by the Advisory Committee of the United States Public Health Service. In the second study both our Wassermann and Meinicke were rated as having specificity of 100 per cent but neither were as sensitive as some of the other tests included in the study. The profession should realize that practically all tests occasionally give falsely positive reactions. In patients having malaria the tendency toward falsely positive reactions is markedly increased. Some tests will give as high as 20 per cent presumably falsely positive reactions in this condition. With the syphilis control program only beginning, the Laboratory is now called upon to examine more than 15,000 specimens per month or at the rate of 180,000 per year. It is readily apparent, therefore, that it will be necessary to develop local laboratory facilities for the sero-diagnostic examinations for syphilis. The Laboratory is arranging for the training of technicians who will not only be capable of making sero-logical tests for syphilis but who will be competent to examine specimens of serum from suspected chancre. Satisfactory specimen containers now make it possible for every physician in the State to have darkfield examinations made at the Laboratory. If we are to have an effective syphilis control program, we must have adequate facilities for early diagnosis. Positive darkfield examinations can be secured approximately one month before sero-diagnostic procedures can be expected to give positive reactions. From the standpoint of public health as well as the welfare of the patient the saving of one month in the beginning of treatment is of vital importance.

An increase in the number of municipal water plants and school survey conducted by the Division of Sanitary Engineering and County Health Work have markedly increased the number of samples of water to be examined. A study of the reports of these examinations indicate that while our municipal water supplies are not as safe as they could be, they are vastly superior to our private water supplies. Open wells and unprotected springs are always potentially dangerous. Approximately 80 per cent of all specimens sent from such sources show evidence of contamination. The 20 per cent showing no evidences of contamination are dangerous and the satisfactory reports which we supplied the owners probably created a false sense of security that may be disastrous to the consumers. No specimens should be sent to the Laboratory from a source where there is any visible way in which the water can become contaminated. The Laboratory can be most helpful as an adjunct to sanitary inspection of a water supply, and should be used only to locate hidden or concealed dangers.

The products of the Laboratory continue to be widely used, there being an increasing demand for them. In the case of typhoid vaccine, considerably more was distributed than would be required to immunize 400,000

people. During the year a new contract for arsphenamines was executed with a different manufacturer at a considerable lower price than that which we have been paying. This saving has been passed along to the medical profession. We feel that in the treatment of syphilis the best service which we can render is to bring the prices of therapeutic agents as low as possible. The marked increase in the demand for these anti-syphilitic drugs is encouraging evidence that the medical profession is giving increasing assistance in the effort to control this disease.

Last year we reported to you that we were endeavoring to secure a new plant for the State Laboratory of Hygiene, that the General Assembly of 1935 had authorized us to apply for a PWA loan and grant for this purpose, that with the approval of the State Planning Board, the Budget Bureau and the Governor and Council of State, the State Board of Health prepared and filed this application. It was rated high from the standpoint of social desirability and economic feasibility. When the application reached Washington the PWA legal and financial advisors questioned the validity of any bonds which might be issued under Section 479 of the Public Laws of 1935. Since it seemed imperative that we have a new Laboratory at the earliest possible moment, and feeling that a PWA grant would be available if we could issue valid bonds, the General Assembly of 1937 generously enacted Senate Bill No. 425 authorizing the State Board of Health, with the approval of the Governor and Council of State to issue $160,000 in Revenue Bonds which would not pledge in any wise the credit of the State. These bonds would be liquidated out of the receipts of the Laboratory. It is our desire that these receipts come from new activities which would be made possible by the new Laboratory plant rather than by making a charge for any of the services which are now free or by making increases in the charges for services which now produces a cash revenue.

Although there are numerous activities which the proposed new plant could make possible, it has been suggested that a nominal charge would produce the required new revenue from the following products:

Whooping Cough Vaccine Improved	Culture Media
Immune Globulin for Measles	Antigens and re-agents
Anti-pneumococcus Serum	Milk examinations

The activities of our Laboratory are limited entirely to those procedures intended to aid in the control of infectious diseases in man. In this field the Laboratory has endeavored to render as much service as its facilities would permit. If greater opportunities for service are made available, a pledge is solemnly executed that commensurate service will be rendered.

Respectfully submitted,

Carl V. Reynolds, M.D.,
Secretary and State Health Officer.

r/e

CHAIRMAN CRAIG: You have heard Dr. Reynolds' report. Is there any discussion? Are there any questions you wish to ask?

PRESIDENT STROSNIDER: Mr. President, I move the report be accepted.

. . . The motion was duly seconded. . .

CHAIRMAN CRAIG: Is there any discussion? It has been moved and seconded that Dr. Reynolds' report be accepted as it is. All in favor signify by saying, "Aye"; opposed, "No." It is so ordered.

Before we adjourn I would like to have Dr. Reynolds tell us about the proposed new laboratory.

DR. REYNOLDS: Gentlemen, two years ago the Legislature passed a bill authorizing us to issue bonds to the extent of $140,000 toward the erection of a new laboratory, with the idea and actual promise at that time of about $112,000 coming from the Social Security Act, which would give us an up-to-date complete laboratory of hygiene, plans, specifications and details having been drawn for that laboratory.

There was some error in presenting it, in the bill, that had to be corrected by another legislative bill. That correction was made at the last Assembly, and we stand now, gentlemen, in position to have a new laboratory which, when finished will be one of the most modern laboratories certainly, in the country.

We are cramped as it is now. To give you an example: We are now examining Wassermanns alone at the rate of 145,000, and have for the past year. They are coming in now at the rate of 180,000. It is impossible to keep up with the demands the laboratory has at the present time. We want to put on some new procedures in that laboratory, develop new products, and we hope to be able to do it in the near future. (Applause)

CHAIRMAN CRAIG: If there is no further business, a motion for adjournment is in order.

PRESIDENT STROSNIDER: I move we adjourn, Mr. President.

. . . The motion was duly seconded. . .

CHAIRMAN CRAIG: All in favor of adjourning signify by saying, "Aye"; opposed, "No." It is so ordered.

. . . Whereupon the meeting adjourned at twelve twenty-five o'clock. . .

THIRD GENERAL SESSION

WEDNESDAY AFTERNOON, MAY 5, 1937

The Third General Session of the Medical Society of the State of North Carolina convened in Room 102, President Strosnider presiding.

The report of the House of Delegates was read by Dr. T. W. M. Long, Secretary.

Dr. McBrayer made a motion that the report be accepted which was seconded and unanimously carried.

PRESIDENT STROSNIDER: The hour has arrived that the terminal station has been announced, the trip has been most pleasant. Hardships there are many, inconveniences too numerous to mention but the opportunity to serve the profession has more than repaid me for the inconveniences, the hardships entailed, and the service rendered often though it has been very poor, the only regret I have is that I haven't been a hundred men at this particular time to go to each county of our state individually and see every man, find out what their troubles were and discuss with them ways and means of meeting them. We are having many difficulties—in many counties two or three physicians are having to take care of the people and these men cannot say no, they have their first love, and that is to serve the community and the people. So many times men have come to me and asked, when may me expect relief.

There are many problems coming up which our officers will take up. I told you when I was installed that I was not a literary man or a man of letters but I did know the language of the general practitioner. I have done the best I could and I assume all the errors of my administration and I want to turn over to my successors this responsibility feeling that these gentlemen likewise will hold their hands that this organization may go forward as it has never before. So with these few words, I pass out of existence as your presiding officer.

Dr. Mangum was asked to escort President Johnson and President-elect Sidbury to the chair.

PRESIDENT STROSNIDER: I give to you my friend, the right hand of strength and I promise you my support to carry out the labors and duties of this office.

DR. WINGATE JOHNSON: I realize the responsibility and appreciate this is the highest office in the gift of the Society. I love and believe in the doctors of North Carolina and I promise to do my best.

DR. SIDBURY: I appreciate the privilege of being Dr. Johnson's understudy. I pledge my word I will be a good student and try to carry out his instructions to the best of my ability.

Mrs. Johnson was presented as Doctor Johnson's teacher.

No further business appearing the meeting adjourned, sine die.

REPORT OF STATE BOARD OF MEDICAL EXAMINERS

As Secretary of the Board of Medical Examiners, I take pleasure in submitting the following report:

During the past year there has been no vacancy and the membership of our Board is the same as it was one year ago, composed of the following gentlemen: Dr. Hamilton W. McKay of Charlotte, President, Dr. F. Webb Griffith of Asheville, Dr. Roscoe D. McMillan of Red Springs, Dr. Ben F. Royal of Morehead City, Dr. W. H. Smith of Goldsboro, Dr.

James W. Vernon of Morganton, and Dr. B. J. Lawrence of Raleigh, Secretary and Treasurer.

There seems to be a tremendous pressure from without by physicians who are seeking to practice medicine in North Carolina. From many states they come and from abroad. The pressure is so great and the number who apply from outside is so large that it has given the Board of Examiners concern, and the consideration of this question consumed quite a long period of discussion at our last Board meeting.

During the past four years we have licensed by examination approximately 273, and during approximately the same period we have licensed through endorsement of credentials from other states and abroad approximately 204. Many more have applied—many foreign born applicants wholly unsuited for consideration come to the Secretary's desk and are thrown out. But for our relative high standard, and but for the fact that this point is carefully guarded, this State would be flooded with a foreign born element which I fear would be most undesirable. This matter should be of concern to every practicing physician in this State. And any one who doubts the correctness of this marked change is invited to inspect the records of twenty or twenty-five years ago and compare that period with the last two or three years. It is estimated that the average number of people per doctor throughout the United States is 785. That includes the southwest and the middle west, where there are relative few doctors. North Carolina has perhaps more than 1700 people for every doctor. The District of Columbia has approximately one doctor for 267 population; California has approximately one doctor for 680 population; Massachusetts has approximately one doctor for 615 population; City of Boston has approximately one doctor for 286 population; New York State has approximately one doctor for 568 population. Here then is one very good reason why our Board is flooded with applicants to practice in this State. And we need more doctors in the rural sections of North Carolina. But we need native born North Carolinians, who understand our ideas and our ideals, who love our people, and the traditions of our State, who know its history, and who are proud of its resources.

It is estimated that there are 27 counties in North Carolina who have more than 2,000 people per doctor. In New York State there are nine large medical schools with 2684 medical students. In Pennsylvania there are six large medical schools with 2425 medical students. In Illinois there are four large medical schools with 2233 medical students. In three of the above states, there are approximately 7,342 medical students—consider the overcrowding there—call the roll of the registered physicians in those States and listen to the sound of those names, and then call North Carolina's roll and listen to the pronunciation of her names. And you will begin to appreciate the difference between the personnel of the profession in those States and in our own State. To be sure, upon the above evidence, it will be readily conceded that the pressure upon the Board of Examiners

for admission by men from outside will never let up under the present conditions until we supply a larger number of Doctors from our own native born North Carolinians, trained in North Carolina for its people. True we have one fine four year medical school, or it is a national or international school, according to the reputation of its friends, and perhaps only a relative small number of its students in its medical division are native born North Carolinians. In my humble opinion, such a condition must have the attention of the best thought in our profession and it becomes my duty to call your attention to the fact that this situation, whatever it may be which has caused this tremendous pressure upon the Board of Examiners for admission by men from outside and abroad is giving your Board of Examiners much concern. Perhaps some new thought may come from the Commission recently appointed by the Governor of North Carolina for the purpose of studying the Medical School situation and authorizing it to make recommendations to the next General Assembly.

The Board of Examiners has had its attention focused upon the large number of narcotic violators in the State, and at our last regular meeting, a committee was appointed to give special thought and study to this question, and to seek the advice and counsel of the Attorney General upon the question.

Your Board of Examiners is working in perfect harmony and in full cooperation with each other, and with the Secretary, and for the best interest of the profession at large, and therefore, for all the people of North Carolina.

Respectfully submitted,

B. J. Lawrence, M.D., F.A.C.S.,
Secretary to the Board of N. C. Medical Examiners.

The list of persons granted licenses follows:

Edwin Burtis Aycock ..... Fremont, N. C.
Archie Lipe Barringer ..... Mt. Pleasant, N. C.
Hugh George Bell ..... Lincoln Hospital, Durham, N. C.
Thomas Hileman Brantley ..... Kannapolis, N. C.
Earl Winfrew Brian ..... Duke Hospital, Durham, N. C.
Victor Brown ..... Greensboro, N. C.
William Lumsden Bundy ..... Fayetteville, N. C.
Richard Wilmot Bunn ..... Henderson, N. C.
John Cole Burwell, Jr. ..... Warrenton, N. C.
James Harry Bunn, Jr. ..... Henderson, N. C.
Allen L. Byrd ..... Raleigh, N. C.
Clarence Paul Cameron ..... Ocean City, N. J.
Chalmers Rankin Carr ..... Mooresville, N. C.
Andrew Long Chesson ..... Elizabeth City, N. C.
Amos Gilmore Crumpler ..... Roseboro, N. C.
Harold Harcourt Culmer ..... Raleigh, N. C.
Gilbert Orville Dean ..... Iowa City, Iowa
Ralph Gibson Fleming ..... Northside, N. C.
Ernest Whitmal Furguson ..... Louisburg, N. C.
Roy Wade Franklin ..... Raleigh, N. C.

Jacob Luther Fritz.....Hickory, N. C.
John Osborne Fulenwider, Jr.....Monroe, N. C.
H. Fleming Fuller.....Franklinton, N. C.
Gilbert Bruce Davis.....Fairmont, N. C.
June Uriah Gunter.....Sanford, N. C.
Len D. Hagaman.....Winston-Salem, N. C.
Raymond Harris Harmon.....Boone, N. C.
Russell Daniel Holt.....Asheville, N. C.
Herbert Andrew Hudgins.....Winston-Salem, N. C.
Dean Hundley, Jr.....Raleigh, N. C.
William Oliver Johnston.....Charlotte, N. C.
Roland Lincoln Kesler.....Sanatorium, N. C.
Murray Carlyle Kinlaw.....Elizabethtown, N. C.
Ben Franklin Martin.....Fayetteville, N. C.
Robert Edgar McCall, Jr.....Marion, N. C.
Mary Margaret McLeod.....Sanford, N. C.
Robert Hartwell Mitchell.....Aulander, N. C.
Reginald Oscar Morris.....Freedmen's Hosp., Washington, D. C.
Davis Lee Moore.....Stokes, N. C.
Robert Page Morehead.....Weldon, N. C.
Robert Hoyle Moorefield.....Salisbury, N. C.
Leland Ray O'Brian, Jr.....Asheboro, N. C.
Philip Grover Padgett.....Forest City, N. C.
Wm. Benton Patterson.....Chapel Hill, N. C.
Charles William Reavis.....Raleigh, N. C.
Nathan Rifkinson.....Brooklyn, N. Y.
Robert Lee Robinson.....Mars Hill, N. C.
James Dan Royster.....Bullock, N. C.
Jacob Harrison Shuford.....Hickory, N. C.
William Ballance Smith.....Freemont, N. C.
William Carey Smith.....Goldsboro, N. C.
Walter Monroe Summerville.....Charlotte, N. C.
Rufus Henry Temple.....Kinston, N. C.
Baxter Suttles Troutman.....Addor, N. C.
Martha Cook Wager.....Monroe, N. C.
Elmer Pixley Walker.....Roxboro, N. C.
Samuel Edward Warshauer.....Wilmington, N. C.
Andrew Jackson Weaver.....Mebane, N.C.
Rayford Lee Weinstein.....Fairmont, N. C.
Thomas Clarkson Worth.....Raleigh, N. C.
Creighton Wrenn.....Garner, N. C.
Abner Augustus Wright.....Washington, D. C.
Wiley Royster Young.....Angier, N. C.
Chas. H. Gay.....Charlotte, N. C.

Endorsements:

Carlton Noble Adams.....Wilsons Mills, N. C.
Columbus Hershel Barnwell.....Chicago, Ill.
Carl C. Sox.....Kenly, N. C.
Robert Lindsey McMillan.....Durham, N. C.
L. L. Parks.....Tarboro, N. C.
John Henry Dougherty.....New York City
Margaret Eliz. White.....Rocky Mount, N. C.
Lloyd Uber Lumpkin.....Baltimore, Md.
Alberti Fraser Lapsley.....Elkin, N. C.

Edward Gaine Cannon.....Hope Mills, N. C.
Milton Douglas Quigless.....Nashville, Tenn.
Paul Hogg.....Washington, D. C.
Channing Glenn.....Petersburg, Va.
Samuel Leon Elfman.....Fayetteville, N. C.
Duncan I. C. King.....Flat Rock, N. C.
John Francis Register..... Greeleyville
Richard Berry Dunn.....Warren, Pa.
John Sherburne Anderson.....Elkin, Ill.
Henry Merritt Stenhouse.....Denver, Colo.
Maria S. Naples.....Buffalo, N. Y.
Jean Colvin McAlister.....Greensboro, N. C.
Wm. Russell Floyd.....Spartanburg, S. C.
Charles Arthur Glenn.....Gastonia, N. C.
Geo. Robt. Carpenter.....Winston-Salem, N. C.
Paul Adrian L. Black.....Medford, Ore.
James B. S. Perrow.....Lynchburg, Va.
Chas. L. Bittinger.....Chatham Hill, Va.
Washington C. Winn.....Keysville, Va.
Eugene A. McCornack.....Elgin, Ill.
Ora James Gibson.....Birmingham, Iowa
Theodore Antonakos.....Greenwood, S. C.
Edwin Patterson Ewers.....Cleveland, Ohio
Frank Earl Davis.....Wilmington, N. C.
Walter Dortsch Hines.....Wilson, N. C.
James Hampton Byerly.....Sanford, N. C.
Lewis Winston Holladay.....Durham, N. C.
Maurice M. Rosenbaum.....Ogdensburg, N. Y.
Andrew Turnbull.....Manitou, Canada
Ralph Eugene Wharton.....Nelsonville, Ohio
Richard G. Parrette.....Jefferson City, Tenn.
Stanley L. Levin.....Beaufort, S. C.
Seth McPherson Beale.....N. C.
David Pollack.....New York City
Jonathan Earl Gardner.....Battle Creek, Mich.
Fletcher R. Adams.....Davidson, N. C.
Parker Calhoun Hardin.....Minneapolis, Minn.

To the N. C. State Medical Society, being a part of the report of the Legislative Committee, working in cooperation with the special committee appointed by the President under the authority of, and at the direction of the Executive Committee at its January meeting held at the Sir Walter Hotel at Raleigh, and according to an order of the Executive Committee, President appointed the special state-wide committee to study the Medical School situation and to act as a steering committee, looking toward the establishment of a four year Medical School in North Carolina.

Under and by the authority vested in the President by the Executive Committee above referred to, he did appoint the following committee: The President, ex-officio a member of all committees, the Secretary, Dr. L. B. McBrayer, Dr. Thurman Kitchen, President of Wake Forest College, Dean C. S. Mangum, Dean of the University Medical School, Dr. William McNider, Chapel Hill, Dr. C. C. Carpenter, Dean of Wake Forest Medical

School, Dr. W. D. James of Hamlet, member of the Legislative Committee of the State Medical Society, and past President of the Medical Unit of the University of North Carolina, Dr. Hubert Haywood, of Raleigh, member of the State Board of Health, and past President of the University Alumni Association and professor of medicine at Wake Forest College, Dr. T. W. M. Long, Senator from Halifax County, and our new Secretary of the State Medical Society. Dr. James W. Vernon of Morganton, member of the State Board of Medical Examiners, Dr. K. B. Pace of Greenville, councillor from the second district, Dr. William Coppridge of Durham, councillor of the sixth district, Dr. Hamilton McKay of Charlotte, President of the N. C. State Board of Medical Examiners, Dr. Wingate Johnson, President-elect of the N. C. State Medical Society, Dr. Z. M. Caviness of Raleigh, former member of the Legislative Committee, Dr. P. P. McCain, Superintendent of the N. C. Tuberculosis Sanatorium, and past President of the N. C. Medical Society, Dr. J. F. Highsmith of Fayetteville, member of the Legislative Committee, and past President of the State Medical Society, Dr. B. J. Lawrence, chairman—and at present Secretary of the State Board of Medical Examiners, and Chairman of the Committee on Legislation and Public Policy of the N. C. State Medical Society, and a member of the executive committee of the N. C. Medical Society, and a group of distinguished and much interested laymen, the Honorable A. Hall Johnson, President pro tem of the Senate and at the present time Judge of the Superior Court, the Honorable J. W. Noell, Senator from Person and Chairman of the Committee on Education in the Senate, Senator Ed Flannington of Pitt, Senator L. Y. Ballentine of Wake, Honorable Ernest Gardner, Walter Murphy, George Uzzell, Sam Blunt, and Archie Allen. The last five being members of the present General Assembly. The Honorable Otis M. Mull of Shelby, former chairman of the Democratic Executive Committee, the Honorable J. Melville Broughton, attorney of Raleigh, member of the Executive Committee of the Board of Trustees of Wake Forest College, Col. J. W. Harrelson, Executive Dean of the State College Unit of the University of North Carolina.

This committee met at the Sir Walter Hotel on the evening of January 28, 1937. There was a very full attendance, almost 100%, either were present in person or sent a letter or a telegram, expressing their full cooperation and their enthusiastic support. There seemed to be an almost unanimous opinion that there was a real need for a fine medical school in North Carolina, affording excellent training for our North Carolina boys at a reasonable cost. Every single member of the Senate and of the House present spoke vigorously and with enthusiasm regarding the establishment of a medical school. Most of the doctors present spoke very enthusiastically in favor of the idea. However, it was thought wise that some further study and planning be done, and Dr. Coppridge made a motion which was passed to the effect that the President, Dr. Strosnider, appoint a sub-committee of which he was to be the permanent chairman, and which should

include on its membership President Frank Graham of the greater University and President Thurman Kitchen of Wake Forest College. This motion having prevailed, the President under date of February 1, 1937, through the Secretary, Dr. McBrayer appointed the following committee: President C. F. Strosnider, Frank P. Graham, Thurman Kitchen, James W. Vernon, K. B. Pace, L. B. McBrayer, Hubert B. Haywood, W. D. James, and Ben J. Lawrence. Chairman President Strosnider called this committee to meet at the Sir Walter Hotel on the evening of February 5. The following gentlemen were present: Dr. Strosnider, Graham, McBrayer, James, Haywood, and Lawrence. Drs. Vernon and Pace were unable to be present, and Dr. Kitchen asked to be relieved from the committee. During the late afternoon, President Graham asked to be relieved and his Dean C. S. Mangum be named in his stead. Dr. Strosnider named Dr. Mangum to serve in the place of Dr. Graham, and Dr. C. C. Carpenter to serve instead of Dr. Kitchen.

The committee had supper and spent the entire evening discussing the matter at great length with marked enthusiasm. It was decided and a motion was passed, instructing the Chairman, Dr. Strosnider, to appoint a further sub-committee, composed of three, to collect data as to the cost of maintaining the third and fourth year of a medical school, exclusive of paid faculty and charity hospital, and such other information as would be helpful and beneficial in the carrying on of this work. The President and Chairman appointed on this committee Ben. J. Lawrence, Chairman of the sub-committee, and L. B. McBrayer and W. D. James as his associates, with the instruction that they were to call upon the other members of the committee for assistance. As a result, this committee has attempted to gather certain data, which is now in hand, and is available for inspection by any interested person and for the benefit of the entire committee. Both Dr. James and Dr. McBrayer have helped with the collection of this data. Your Chairman has visited personally several medical schools, has held long conferences with several Deans of fine medical schools with a splendid history behind them. Among the Deans of Schools actually visited, and with whom we have had personal conferences are to be mentioned the following: Dean J. M. H. Rowland, of the University of Maryland at Baltimore, Dean Sutton of the Richmond Medical School at Richmond, Dean Wilson of the Charleston School, the Georgetown School in Washington, and Dr. Kelly, Dean of the University of Georgia Medical School. In addition to these personal conferences and visits, we have in our file letters and figures of a most helpful and most instructive nature from the following Deans: Dr. O. W. Hyman, Dean of the University of Tennessee, Medical Department at Memphis. He writes a most helpful and beneficial letter. Dean Robert Wilson of Charleston, S. C., writes a full letter, giving the figures and estimates as does Dean Hyman. Dean Emmett B. Bay of the Rush Medical College wrote a rather full letter, giving his estimates on Feb. 23. On February 20, Dean J. M. H.

Rowland gave me a very complete set of figures, including such details as books, lights, heat, and cleaner, stenography, technicians, and the like. He also has had some correspondence with Dr. James, a member of this Committee. A very helpful letter from the University of Manitoba Medical Faculty, at Winnipeg, signed by their Secretary, Dr. A. N. McLeod.

On February 19, Dean Kelly wrote a letter frankly setting forth his estimate of the cost, as did Dean McCauley of the Georgetown University School.

Dr. Hubert Haywood, a member of this committee, has a tentative engagement to see Dean Flippin of Medical Department of the University of Virginia.

The Chairman of this Committee wishes to thank Dean Mangum of the University Medical School for the spirit and wording of his letter of January 29; and to ask his continued cooperation and help in the collection of data and information on this all important subject. Following the appointment of this sub-committee, we wrote Dean Mangum, urging him to take the leadership and to help to guide us in this collosal undertaking We wish to renew that request and confidently count upon his leadership And this same request is renewed to Dean Carpenter.

Your committee feels encouraged and delighted with the data now in hand, and the progress they have made in so limited a time, and we hope to have a great deal more information in the not distant future. We, therefore, respectfully submit this brief resume of our activities up to the present time and ask for an extension of time in order to continue our investigation.

Very respectfully,

L. B. McBrayer
W. D. James
Ben. J. Lawrence,
Sub-Committee.
B. J. Lawrence,
for Sub-Committee.

SCIENTIFIC SECTIONS

OPHTHALMOLOGY AND OTOLARYNGOLOGY

GYNECOLOGY AND OBSTETRICS

PUBLIC HEALTH AND EDUCATION

SURGERY

PRACTICE OF MEDICINE

PEDIATRICS

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

TUESDAY AFTERNOON, MAY 4, 1937

The Section on Ophthalmology and Otolaryngology of the Medical Society of the State of North Carolina convened in the Club Room, Hotel Robert E. Lee, Winston-Salem, at two-thirty o'clock, Dr. Frank Smith, Chairman of the Section, presiding.

CHAIRMAN SMITH: The meeting will please come to order.

I am very sorry that we have had this delay, but there was no other room in the hotel to be had and we had to wait until this room was cleared.

I appreciate very much the honor of serving you this year. The work has really all been done by your Secretary.

I thought we had a program, without a Chairman's Address, which would last exactly three hours if we started on time. As it is, we will probably be a little longer than that, but we will proceed immediately with the program.

The first paper will be by Dr. H. C. Neblett, of Charlotte, on "Congenital Dacryocystitis."

DR. H. C. NEBLETT: Mr. Chairman, Ladies and Gentlemen: Two years ago I read parts of this paper before the Mecklenburg County Medical Society in Charlotte, and I beg the indulgence of those here who may have heard it.

I also wish to apologize for bringing this subject before this Section and its distinguished guests, because I have nothing new to offer and nothing of a specific scientific import. My excuse for presenting this paper is to attempt to give a practical method of handling an affection that is fairly common in infants and young children.

. . . Dr. Neblett then presented his prepared paper. . . (Applause)

CONGENITAL DACRYOCYSTITIS IN INFANTS AND YOUNG CHILDREN

H. C. NEBLETT, M.D., Charlotte, N. C.

Neither text books of ophthalmology nor the current literature give an adequate idea of the prevalence of this affection. In the ophthalmic literature reviewed the subject is very briefly considered and usually in conjunction with dacryocystitis in adults. Hence, it seems that ophthalmologists have not given it the consideration it merits.

Incidence. The consensus of opinion is that the affection is fairly common, and that many cases, especially those of the intermittent type, and those activated only in the presence of a coryza or an exanthema, are not diagnosed, do not receive treatment, or are treated as a simple conjunctivitis. The literature gives from 1½ to 2% but this is based on those cases requiring urgent medical or surgical intervention. Incidence would no doubt be much greater should all degrees of obstruction be considered. However, means are not available by which this can be definitely determined and the oculist's concern is primarily with those cases requiring specific treatment.

Etiology. The congenital type of dacryocystitis is principally determined by the anatomy of the lacrymal excretory apparatus. According to Santos Fernandes the canal is long, narrow and tortuous in the white race; short, straight and wide in the negro. This accounts for its frequency in the one as compared to its extreme rareness in the other. The lacrymal sac in the adult averages ½ inch in length by ¼ inch in width, the nasal duct ¾ inch in length by ⅛ inch in diameter. These dimensions are much less in the infant. The mucous membrane of the sac and duct is lined with a double layer of cylindrical epithelium which lies in small folds stimulating valves. These, for the most part, lie at the upper constricted portion of the duct and at its lower end where it enters the nasal fossa, and are known as the valves of Hasner. Delayed opening or non-opening of these after birth, especially the lower one, is the most frequent cause of partial or total obstruction of the duct. At birth the sacs and ducts are filled with gelatinous epithelial debris which if slow to be dissolved causes a temporary blockage even though the duct is patent. Other causes, largely contributory, are faulty development of the embryological cartilages surrounding the duct, and partial occlusion of its lower end due to pressure by the inferior turbinate bone. Its conformation may be altered by asymmetry of the face, and by a local or general disposition to tear duct trouble. Heredity is given prominence by many. Cohn says the affection is more common in girls than in boys, and Nettleship places the ratio at 4 to 1. The left duct is more often involved than the right, both rarely involved, and when present syphilis should be suspected. Bilateral involvement sometimes occurs on the second or third day of life from the use of the prophylactic silver nitrate solution especially when this has, through age, become stronger than the standard solution of Crede. Prompt recovery is the rule. The pneumococcus is the most common organism found in the simple types, whereas the acute complications are usually due to the streptococcus pyogenes.

History and Symptoms. Usually from a few days after birth to the second or third month of life, the lacrymal gland then active, the infant presents a watery eye and gluing together of the lids in sleep. These may be the only signs in the mild type and may only be brought to the attention of the mother in the presence of a coryza or from any cause producing

irritation of the mucous membrane of the eye sac. The more common signs in the frank type, in addition to those named, are a mucopurulent discharge in the eye sac and inflammation of the mucous membrane of the lids and globe. Pressure over the lacrymal sac will express a free discharge from the duct thus definitely establishing the diagnosis. The complications that occur in the untreated cases are ulceration of the lids and cornea, eczema of the skin of the cheek and lips on the side of the involved duct, and phlegmon of the lacrymal sac. The latter is a serious condition especially with reference to the future status of the sac and duct, and presents a very troublesome problem to the patient as well as to the physician.

Treatment. It is generally agreed that early diagnosis and prompt treatment will give good results and prevent complications. However, opinion is about equally divided as to the method of treatment. One holds that protracted treatment by digital pressure over the duct will cure the majority of cases and probing the duct is to be delayed as long as possible. The other holds that conservative treatment should be tried for a brief period, and if recovery is not prompt probing is to be done without delay.

It seems that the latter procedure should prevail from an economic viewpoint, and time saving factor to the child's parents, as well as from the fact that early probing results in prompt recovery in 9 out of 10 cases. Good results are greatly enhanced by careful technique and respect for the delicate structures in the field of operation. This can not be overemphasized. And it is probable that poor results and complications from probing are based upon a disregard of these essentials. Similar results, by probing, are further augmented because it is done under local anesthesia, or without any, while an assistant attempts to hold the child's head. A light ether anesthesia is all that is required, and is indispensable for precision and accuracy of technique. Its use should be routine except when specifically contraindicated. Post-operative treatment is limited to daily massage of the duct and instillation of mild astringent drops for one week.

It is believed that many cases of chronic dacryocystitis in adults had their incipiency in these congenital types which perhaps were either temporized with, improperly treated or not recognized. Many such patients give a history of a watery eye, intermittent attacks of a mucopurulent exudate in the eye sac, and gluing together of the lids in sleep since early childhood. Some cases of intractable conjunctivitis, episcleritis, and epiphora in adults are based upon such a background.

The following is a report of 23 cases which occurred in my private practice in the past 6 years. It is realized that no hard-and-fast conclusion can be drawn from such a small group, but the findings and result of treatment are at least suggestive. In this period 965 children were seen whose ages ranged from a few days to 15 years, the great majority being less than 10 years of age. Of this number 23 had dacryocystitis or 2.4%. This percentage would be much higher had there not been included children over 10 years of age among whom no case was seen. Of these patients

Case	Eye	Age at Onset	Age First Treatment	Symptoms and Complications	Duration and Result of Preliminary Treatment	Remarks
1	L	Two weeks	Two months	Epiphora and moderate mucopurulent discharge.	One month, no improvement.	Probed. Prompt recovery. Now 6 years old. No recurrence.
2	L	Three weeks	Ten years	Severe conjunctivitis, mucopurulent discharge, epiphora and red globe.	1½ months, no improvement.	Parents refused probing or further treatment. Symptoms continue. Now 16 years old.
3	R	Three months	Seven months	Epiphora, mucopurulent discharge. Diaphragm lower punctum.	None.	Diaphragm slit, duct probed. Prompt recovery. Now 4 years old. No recurrence.
4	L	Two months	Three months	Moderate epiphora and exudate.	One month, recovery.	Now 5 years old. No recurrence.
5	R	Three months	Four months	Severe epiphora, mucopurulent discharge Phlegmon 3 times prior to 9 months of age while living in St. Louis. Incised each time. Never probed. 4th phlegmon when seen by me, 2 fistulae over sac and large scar site of old incisions. Eczema of cheek	Incision and drainage for one month with improvement.	Probed through sac incision three times in one week. Prompt recovery. Now 7 years old, has had measles, scarlet fever and whooping cough without recurrence.
6	R	One week	Two months	Epiphora, mucopurulent discharge, intermittent, mild.	Six months with recovery.	No recurrence. Now 6 years old.
7	R&L	Two weeks	Four years	Epiphora. Intermittent mucopurulent discharge.	Three months with recovery after improvement of general condition and recovery from otitis media.	Poor physical condition. Otitis media bilateral, since soon after birth. Now 7 years old. No recurrence.
8	R	Ten days	Three months	Epiphora and mucopurulent discharge, severe. Left also involved up to 2 months of age.	One month with no improvement.	Probed. Prompt recovery. No recurrence to time of death by burning one year later.
9	L	Two weeks	Six months	Severe epiphora and mucopurulent discharge from upper caniculus. Diaphragm closing lower puncta.	One week with no improvement.	Diaphragm slit, duct probed. Prompt recovery. No recurrence. Now 4½ years old.
10	R	One month	Three months	Epiphora and mucopurulent discharge. Moderate inflammation lacrymal sac.	One month and no improvement except subsidence of sac inflammation.	Probed. Prompt recovery. No recurrence. Now 4 years old.
11	R	Two weeks	3½ weeks	Epiphora and mucopurulent discharge.	Three weeks, no improvement.	Did not return for continuation of treatment. Subsequently unable to locate parents.
12	L	Ten days	Two months	Severe mucopurulent discharge.	One month. No improvement.	Probed. Prompt recovery. Now 3½ years old. No recurrence.

Case	Eye	Age at Onset	Age First Treatment	Symptoms and complications	Duration and Result of Preliminary Treatment	Remarks
13	L	At birth	Seven months	Red eye at birth and continuous heavy mucopurulent discharge.	One week. No improvement.	Probed. Prompt recovery. No recurrence. Now 4½ years old.
14	L	At birth	Four months	Epiphora and severe mucopurulent discharge.	One week. No improvement.	Probed. Prompt recovery. No recurrence. Now 3½ years old.
15	L	At birth	14 months	Severe epiphora and mucopurulent discharge. Severe eczema lower lid, cheek and lips. Ulcerative keratitis.	One month. No improvement except relief of eczema and subsidence of corneal ulcer.	Probed. Prompt recovery. Now 4½ years old. No recurrence.
16	L	Two months	Three months	Epiphora and mucopurulent discharge, severe.	Three months. No improvement.	Probed. Prompt recovery. No recurrence. Now 2¾ years old.
17	L	Since birth	2½ months	Epiphora and mucopurulent discharge.	One month. No improvement.	Probed. Prompt recovery. No recurrence. Now 2¾ years old.
18	R&L	Since birth	Nine months	Heavy mucopurulent discharge, especially OD. Diaphragm closing each lower punctum.	Two months. No improvement.	Both puncta slit, ducts probed. Prompt recovery. No recurrence. Now 2¼ years old.
19	L	Since birth	Ten days	Phlegmon lacrymal sac at birth.	None.	Sac incised and drainage until acute symptoms had subsided, followed by massage resulting at end of two months in breaking obstruction lower end of duct and prompt recovery. No recurrence. Now one year old.
20	L	Since birth	Six months	Very slight epiphora and occasional mucopurulent discharge, scanty.	Nine months, moderate improvement.	Partial occlusion of duct. Probing advised, but parents wished to wait. Now 15 months old.
21	L	One month	Two months	Slight epiphora, scanty exudate.	Two months with recovery.	Now one year old. No recurrence.
22	L	8 days	5½ months	Epiphora and moderately severe mucopurulent discharge.	One month and very little change.	Still under treatment.
23	R	Four years	Four years	Severe epiphora and mucopurulent discharge. Red eye and lids. Probably exostosis closing lower ¼ of duct.	Two years, no improvement. Under local lower caniculus slit and 3 attempts to probe duct during past 6 months without results.	First seen by me 3-8-37 and under ether unable to pass probe through lower end of duct. Probe will engage but not pass. Child with circus enroute to Texas.

one was a mulatto, two were Syrians and the rest native white Americans. Of this number 16 were boys and 7 girls. This is the reverse of the experience of others. The right eye was affected in 7 patients, the left in 14 and bilateral in 2. This conforms to the experience of others. When first examined the youngest child was 10 days old and the oldest 10 years. The ages of 18 patients ranged from 10 days to 9 months and 5 from 1 to 10 years. The history, symptoms, complications, treatment and results in each patient are listed in the accompanying table.

Probed 13, refused probing 3, probing unsuccessful 1, recovery by massage without probing 5, now undergoing treatment by massage and drops 1. Total 23. Complications were present in 10 patients as follows: Conjunctivitis ocular and palpebral, severe, 2, phlegmon 3, eczema lid, cheek and lip 2, keratitis 1, diaphragm closing puncta 4, bony stenosis 1. Total number of complications 13.

Comment. In all of these children, as long as massage of the duct was continued, the local irritation, epiphora and purulent discharge were lessened due to the mechanical factor of keeping the lacrymal sac and the eye sac free from debris. From this series of cases the question arises what percentage of them would have recovered by continuing, for an indefinite period, means of treatment other than probing. This can not be answered. However, this series proves that probing is signally efficient, that it should not be unduly delayed, that it is not hazardous, that it should be done with the patient under a light general anesthesia, and that one probing usually suffices. It is very probable, however, that some patients recover spontaneously, especially those with blockage of the duct by a thin diaphragm or gelatinous material which becomes disintegrated during the course of an acute nasal infection or by a mild acute exacerbation within the canal leaving it patent. In children from one year of age and up with a chronic dacryocystitis existing since the first few weeks of life good results from treatment by any means are greatly minimized. It is rare to find chronic dacryocystitis in children past puberty or in adults which have been materially benefited by repeated probing. A radical operation on the lacrymal sac must be done or the patient carry on with a watery and mucopurulent eye sac, tolerating the discomforts and courting the complications that are common to this affection. The silver salts are best left off in the preliminary treatment of these patients. Argyrosis has occurred from their use especially where, from any cause, the continuity of the mucous membrane lining the nasolacrymal duct has been broken. Forced irrigation through the caniculus in these infants is practically impossible and rarely effective; hence scarcely justifiable in lieu of carefully probing the duct. Slitting the caniculus is unwarranted except in rare conditions for the purpose of probing the duct or for removing concretions therein. Three patients in this series, two with unilateral and one with bilateral stenosis presented a tough diaphragm over the lower punctum which had to be slit before a probe could be passed. A Zeigler needle knife is excellent for this purpose. Operation should not be done in the presence of an acute

exacerbation of the affection nor in any other acute condition. There were 2 cases in brothers the affection involving the right eye of each at 2 weeks of age. No specific hereditary factors could be elicited in any patient. Probing was not done on any child under 3 months of age. A second probing was not necessary in any patient in this series. A No. 3 Bowman's probe was the largest used. Larger than a No. 1 could not be passed in one patient. A probe larger than a No. 4 is contraindicated because of its traumatizing effect upon the canal. The longest period since operation was done on any patient in this series is 6 years, the shortest 1 month. The child 6 years of age, who had had a dacryostenosis since 4 years of age, must be considered an acquired case in lieu of no definite history to the contrary.

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CHAIRMAN SMITH: Discussion of Dr. Neblett's paper will be opened by Dr. J. G. Johnston, of Charlotte.

DR. J. G. JOHNSTON (Charlotte): One of the disadvantages of discussing this paper is that Dr. Neblett hasn't left much for the other fellow to say. It is a question we all run into, but I don't know whether we are able to add much to it, or not.

Dr. Neblett gives the frequency, I believe, as one and a half to two per cent. I notice some other man gives a series of about 1350 or 1400 cases—something like that—and his frequency runs to one and three-quarters per cent, I believe it is. It is a question in my mind as to whether or not that is high enough. I rather think that it is too low.

Those of us who once did general practice would find a number of those children who would have a watery eye, and there would be some little discharge. After a while, in the course of a week or two, it would all pass away. Those cases, of course, would not be counted. We have no reason to believe that that same condition doesn't exist right now: that there are a number of those children that the oculist never sees and who therefore are not counted in those percentages.

Wood and Woodruff, in speaking of this subject, say that the majority of these cases are in women of middle age, but they say it does sometimes occur in infants and young children, especially where there is a syphilitic or strumous taint.

Dr. Edward Jackson several years ago expressed the opinion that many cases of this were due to delayed development of the nasal duct and referred to thirty autopsies by De Vocovich and Duvigheaud in which the lower end of the canal had not been opened.

Ida C. Mann says the lumen of the canalicular system is first completely blocked by epithelial cells. These begin to soften at about the 500 millimeter stage and true canalization starts soon after this. Some are not complete at birth and a congenital lacrymal obstruction is produced; it is a delay in canalization, and not inflammatory.

A. Conge reports a case of gangrenops dacryocystitis in a baby fifteen days old. Vincents spirillae and fine Gram negative bacilli and many staphylococci were present. No improvement was noted in the treatment until a mixed serum was used. Two injections showed great improvement but, unfortunately, death occurred soon after the third injection. We don't know what the result would have been finally.

Peters claims that atresia of the naso-lacrymal duct is a congenital malformation, and reports cases in mothers and children, and also cases in brothers and sisters.

Kramer holds dacryocystitis in the new-born is caused primarily by occlusion of the naso-lacrymal duct. Streptococcus is the most frequent organism found, according to him. Gonococcus was not found to be a cause. When the discharge is sterile, he advocates probing the duct, but when it is not sterile, in his opinion, expression is preferable.

Crigler says that so-called congenital dacryocystitis is an infection of the retained excretions from the conjunctival sac, and not an inflammation of the sac wall. It is due to a delay in the process of canalization. In ninety-five per cent of the cases, the last point of opening is the juncture of the canal and the nasal wall. His treatment consists of permitting the sac to become fully distended. Then, holding the child's head between his knees,

he occludes the puncta and makes firm pressure from above downward. This forces the fluid to break through into the nose, and the trouble is cured. He says that he has had many cures and no failures after one manipulation.

Dunbar Roy says infantile lacrymal stenosis will sometimes cause a true dacryocystitis, and divides these cases into three groups:

First, real congenital malformation;

Second, spasmodic contraction in some portion of the canal;

Third, catarrhal thickening of the mucous membrane at some point in the canal.

His treatment consists of expression of the contents of the sac, mild antiseptics in the eye, and a nasal treatment that might be indicated in each individual case, and occasionally probing and washing out. But he makes this significant statement: most cases will recover without treatment.

Green thinks that a majority of cases of infantile dacryocystitis are the result of blockage of the lower end of the nasal duct by fetal remains, and the rational treatment is to probe the canal after expression and lavage have failed.

W. L. Simpson reports two cases, one of which was congenital, and in both of which treatment was unsuccessful until the anterior ethmoid cells were cleared out, after which they healed promptly.

This might be continued almost indefinitely, but it is useless. I feel that these cases have practically coincided with Dr. Neblett's experiences in his cases.

I just wish to stress two things, in conclusion:

First, in probing these cases it should always be done under a general anesthesia. Any of you who have tried holding a child's head between your knees and passing a probe into the duct know how quickly and suddenly the movements of that head take place, and you don't know where you are going. It isn't difficult to pass the probe where you don't want it to go.

The other thing is to use extreme gentleness in passing this probe. (Applause)

Chairman Smith: Discussion of Dr. Neblett's paper will be continued by Dr. Crump.

Dr. Crump: Mr. Chairman, Ladies and Gentlemen: I feel highly honored in being asked to continue this discussion, in view of the fact that practically every man present has had more experience in this condition than I possibly could have had.

I think that Dr. Neblett is to be commended on the remarkable manner in which he has handled this subject, because of the fact that this condition is not considered common, and there is very little in the literature about it from any definite point of view.

I can add very little to what he has had to say, other than the fact that I agree with practically everything he has said. Most of the literature that I have read has presented the same facts that he brought out, that there are two different types of treatment: those that delay and use conservative treatment before attempting to pass a probe in any manner whatsoever, and those that immediately start probing in the absence of any acute complications.

I also agree that no probe should be passed, unless there is a general anesthetic, because it is impossible to control the movements of a child of that age.

I should just like to close my discussion with one question to Dr. Neblett which I wish he would answer if he can or if he has any opinion about it.

I am of the impression that the acquired cases respond very poorly to this type of treatment, whereas the congenital cases respond remarkably to this type of treatment, that is, probing. I would like to ask if he has any opinion as to why this should be. (Applause)

Chairman Smith: Is there any further discussion?

Dr. Neblett, will you close?

Dr. Neblett: I wish to thank the gentlemen for their discussions.

Answering Dr. Crump's question, my paper deals specifically with the congenital type. I didn't mention the acquired type.

As I said in my paper, I felt that in any case that had been temporized with until a child was a year old or over, with a congenital dacryocystitis, your chances for results are greatly minimized with any method of treatment. I think that will be borne out by most anyone.

I am sure I don't know specifically why the adult cases, or the older cases of long standing, do not respond to treatment, but it must be because of altered function of the epithelium within the canal itself, strictures, fibrous tissue formation, and other things, because as soon as the duct is probed it will close again in the majority of them. Repeated probing suffices probably for only one thing in the majority of cases, and that is to have it done again, with a good deal of pain.

Radical operation would seem to be the only procedure in a great many of these adult cases for final results and Walthal of England I think has come out with a recent article in which he states that silver and gold cannulae are used by him, with marked success. I don't know anything about that.

I should just like to stress one thing, that I primarily brought this paper up for, and that is this: that the tissues within the lacrymal excretory apparatus and the tissues adjacent to it are of such a delicate nature that the most careful technique should be used. Great precision should be exercised in using it, and you cannot do it without a light general anesthesia.

I feel that the majority of the complications and poor results that have occurred from probing in the cases of these youngsters has been due to disregard of that fundamental principle.

Thank you very much. (Applause)

CHAIRMAN SMITH: At this time Dr. MacConnell of Davidson will introduce our guest today.

DR. JOHN W. MACCONNELL (Davidson): I have the great pleasure of being asked to introduce our guest speaker for today. Exactly why I was called on to introduce this speaker, when there are so many here who could do it much more gracefully, I do not know, except for the fact that no one here has known him longer, few know him better, and none loves him more.

It is always a great pleasure for us to welcome home one of our sons who has gone far, both in distance and in the fields of his endeavor, and the old saying, trite though it may be, about how our hearts burn when we turn to the homeward strand, is always true. I know our guest speaker is happy to be back with us today.

I have known Dr. Reese since he was a youngster. I knew him through his college course at Davidson. I have followed with interest his career since then, and we know that he has reached a point of eminence in his profession that we are all proud of.

Dr. Reese, after graduating from Davidson College, went to Harvard. Then he was abroad in Vienna for some time doing pathological work, as well as other work, work with his distinguished uncle, Dr. Robert Reese of New York.

He is now associated in the Opthalmological Institute of New York with Dr. Wheeler.

Nowhere could we find a man who could address us on this subject that he has taken today, the question of "The Operative Treatment of Primary Glaucoma," who has studied more widely in that field, and we know that he will give us something practical.

So many times all of us, those of us who have been coming here year after year, like Dr. Banner, Dr. Greene, and others of us, have invited speakers who have talked about something that wasn't so very much worthwhile, although it showed a very deep knowledge of the subject on the part of the particular speaker. But today we have a speaker who is going to speak to us on a practical subject that concerns all of us—how to save these eyes in primary glaucoma.

It is now my great pleasure to invite my old friend and pupil, Dr. Algernon Reese, of New York City, to speak to us on that subject. (Applause)

DR. ALGERNON B. REESE: Mr. Chairman, Dr. MacConnell, Members of the Section on Opthalmology and Otorhinolaryngology of the Medical Society of the State of North Carolina: I appreciate immensely the privilege of appearing here, and also of participating in your program.

My surprise at being here is somewhat like that of the very drunk man who was wending his way back to Brooklyn across the Brooklyn Bridge after a very gay evening in New York. It was a bright, clear, crisp spring evening. The moon and the stars were out. As this drunk got half way across the bridge he paused to peer over the side into the river below, and he was quite surprised at what he saw. So he called an officer who was nearby over. He said, "Come over here, Officer." He said, "Are those the stars that I see down there?"

The officer said, "Yes, those are the stars."

"Is that the moon that I see down there?"

He said, "Yes, that is the moon."

The drunk said, "Well, how the hell did I get up here?" (Laughter)

THE OPERATIVE TREATMENT OF PRIMARY GLAUCOMA

Algernon B. Reese, M.D., New York City

A great deal is written about glaucoma and that very fact implies there is something to be desired. Certainly this is true in regard to the early diagnosis of the disease. This phase is so important because if the condition is detected in its incipiency it can not be successfully treated except in the rarest instances. If the diagnosis is not made until the disease is well established as indicated by cupping of the optic disc, contraction of the visual fields, permanent elevation of intra-ocular pressure, etc., then the chances of arresting the process are definitely less.

The earlier the diagnosis is made the better. At or near the prodromal stage is the ideal. This is made very difficult usually though, because of the insidiousness of the onset. We should therefore really suspect glaucoma in every patient and, to be sure, in certain ones that we know are predisposed to it. These are hyperopes with a shallow anterior chamber, all patients with cataracts (if the tension is taken routinely on every cataract patient before operation it is surprising how often it is found elevated), all patients with uveitis, all patients who give a history of unilateral pain in or around the eye or transitory attacks of blurred vision or halos.

The frequent use of the tonometer is advocated very strongly. It would be profitable to include it in the routine examination but this is not always feasible. It should certainly be used routinely in all cases enumerated above.

In using the tonometer certain precautions should be taken to avoid false readings and particularly false hypertensions. Good anaesthesia is essential and requires the installation of a suitable anaesthetic three times, several minutes apart. The patient should be in the reclining position so that the cornea points directly upward with the disc of the instrument resting squarely on the cornea. The lids should be held free of the globe and by so doing it can be determined whether the patient is completely relaxed and is not elevating the tension by squeezing.

If glaucoma is suspected but the diagnosis cannot be established by the normal means then one is justified in employing some form of midriatic. I prefer to use cocaine first. If this produces no rise in the intra-ocular pressure I use homatropine. This is perfectly safe if the patient is kept under observation until miosis occurs by the use of a 1% solution of eserine. Another manner of establishing an early diagnosis in suspicious cases is to admit the patient to the hospital for the measurement of the intra-ocular pressure every two hours over a period of twenty four hours. The intra-ocular pressure varies throughout the day, and the reading that we obtain at any particular moment in the office may not be representative of what is taking place at other times in the day.

After the diagnosis of glaucoma has been established an operation is indicated in those cases not controlled by miotics. An exception to this is the patient whose intra-ocular tension is somewhat above normal even with the strongest miotics that can be used routinely, but the patient has an expectancy, either because of age or poor health, which makes it justifiable to temporize with the idea that the vision will probably outlive the patient. An operation is also indicated when, with the use of miotics, the intra-ocular pressure is normal or near normal when it is measured, but the visual fields continue to contract which indicates that the tension is sufficiently above normal at certain periods of the day to make inroads on the fields.

When the indications point toward an operation then we should not temporize with miotics. The earlier the operation is done in the course of the disease the more likely it is to succeed. The tendency so often is for the patient or the doctor or both to procrastinate until the disease has advanced to the point where the chances of success have been greatly lessened.

There are factors which make for procrastination in operating. We are dealing usually with a high strung, nervous, apprehensive individual to whom we advise an operation on an eye usually with normal vision and often giving no symptoms. We promise this patient no tangible result as we do in squint and cataract cases. We can only state that we hope to save the vision for the future.

Microscopic sections of glaucomatous eyes were projected and the pathologic changes that occur from the very early to the late stages were pointed out with particular regard to those which have a bearing on the indication for the various operative procedures. In the early cases no peripheral synechiae were present. It was shown that a vascular crisis occcurs in the ciliary body and its processes which produces an edema of these structures. This pushes the root of the iris forward and embarrasses the filtration angle and the pressure becomes elevated. When the crisis and the edema subsides the root of the iris recedes and the pressure declines. If this occurs often enough and over a sufficiently protracted period ulti-

mately peripheral synechiae are formed and when these occur over enough of the circumference of the filtration angle to prevent adequate drainage then the intra-ocular pressure is constantly elevated. It can be said therefore that glaucoma causes peripheral synechiae which in turn cause glaucoma. Here is a vicious circle initiated by the unknown factor responsible for the vascular crisis in the ciliary body and its processes. Peripheral synechiae therefore do not occur in early glaucoma. Also, in the early stages of the disease the iris shows very few changes. These are confined mostly to merely the migration of individual or groups of pigment cells through the stroma to the anterior surface and even into the anterior chamber where they frequently are deposited on the posterior surface of the cornea and in the meshes of the pectinate ligament.

In the later stages of the disease besides the cupping of the optic disc it was noted that peripheral synechiae exist and that these become progressively more extensive. The chromatophores composing the loose areolar stroma of the iris are gradually replaced by rather densely packed non-pigment bearing fibroblasts so that ultimately the iris is merely a flat fibrous membrane with none of its normal markings such as the angular line, the crypts, the contraction furrows, etc. These manifestations of glaucoma which appear in the later stages will be spoken of subsequently as secondary changes.

Cases of glaucoma in which surgery is indicated may range from the acute type with high intra-ocular tension, congestion of the eye, pain and diminished vision to the simple type with almost normal intra-ocular pressure and no symptoms except an insidious loss of the nasal fields of vision. Between these two extremes there may be all grades.

It can be said that the nearer the type approaches the acute end of the scale the more readily it responds to surgical treatment and the nearer it approaches the simple end the more resistant it is.

For acute and early subacute glaucoma an iridectomy is agreed upon as a highly satisfactory and successful operation. It results in an arrestment of the disease in most instances.

Most of the controversy over the choice of operation occurs in regard to those cases toward the simple end of the scale and the nearer they approach the simple type the more the controversy, for these are the ones most difficult to treat.

There are advocates for the trephine, the LaGrange, the cyclodyalisis, the iridotasis and others and many modifications of each. I think an important factor in the choice of an operation is which operation the individual surgeon does best and has had the most experience with. The operations which are in most surgeons repetoire are the iridectomy, the LaGrange, the trephine, the cyclodyalisis and the iridotasis. Indications for these various operations will be discussed briefly.

The iridectomy is certainly the operation of choice in acute glaucoma.

The LaGrange operation which is really a modified iridectomy is indicated in glaucoma of short duration with few secondary changes in the anterior part of the eye. The intra-ocular tension should be controllable by miotics which indicates that the peripheral synechiae are not present over a sufficient area of the circumference of the filtration angle to prevent the drainage of aqueous should interference by the iris be removed. Gonioscopy is simple to do and gives valuable information regarding the state of the filtration angle.

The trephine operation is indicated in glaucoma with moderate secondary changes in the anterior sector of the eye. It should be done on eyes in which the intra-ocular tension cannot be lowered to normal by the use of miotics. This indicates that peripheral synechiae are present sufficiently to prevent the proper outflow of aqueous and that the removal of the periphery of the iris to prevent it from blocking the filtration angle cannot be accomplished. In such instances it is necessary to produce a vicarious sluice-way for the drainage of aqueous subconjunctivally.

We employ the *cyclodyalisis operation rather rarely and feel that its indications are in the following instances—

1. In simple glaucoma when the tension is just above normal. The reason for this is because the suprachoroidal space into which the aqueous drains from the anterior chamber has a limited power of absorbing. If this is taxed beyond its power then the intra-ocular pressure rises and by so doing presses the ciliary body against the sclera closing or diminishing the flow of aqueous from the anterior chamber thru the operative site into the suprachoroidal space.

2. In glaucoma that occurs in aphakic eyes following the extraction of a cataract. This operation is particularly effective in these cases and is recommended above all others.

The iridotasis and iridencleisis operations and their modifications are seldom done by our group. We employ them occasionally in advanced and desperate cases after other operations have failed. They are no doubt much better operations than our seldom use of them would imply. The indications for them are the same as those for the trephine where a vicarious sluice-way for the subconjunctival drainage of aqueous is necessary. In cases of hemorrhagic glaucoma with many dilated blood vessels in the iris we may do an iridotasis in order to forego any cutting of the iris.

Microscopic sections of glaucomatous eyes on which various types of operations had been performed were projected. Some of the operations had been successful and the eyes only obtained for microscopic examination at autopsy, while others had not arrested the glaucoma and therefore led

*In far advanced cases we frequently do a cyclodyalisis combined with an iridectomy as advocated by Wheeler.

to enucleation. A critical discussion of these operations was given and the following points demonstrated.

1. In eyes on which the iridectomy had been performed with the incision made by a keratome it was shown that the instrument invariably engaged the sclera too near the limbus and therefore entered the anterior chamber too far centrally in the cornea. As the blade of the instrument must enter the anterior chamber on the same plane as that of the iris to prevent injuring the lens, then the incision should be started considerably further back in the sclera in order to enter the anterior chamber thru the filtration angle. Such a peripheral incision is desirable in order to exercise the iris at its insertion into the ciliary body and thereby not leave a peripheral tag of iris which can block the filtration angle. It was pointed out that the iris is thinnest just at the site where it inserts into the ciliary body, and therefore those cases in which the root of the iris was torn away rather than cut away left less of the iris root behind. In those cases of iridectomy in which the root of the iris has been completely exercised one should be able to see the ciliary processes by having the patient look up and examining the periphery of the coloboma with a +10. lens in the opthalmoscope. It was demonstrated that when an iridectomy is done on an eye after synechiae have formed that the iridectomy is central to the synechiae and therefore no freeing of the filtration angle of iris tissue is possible. Iridectomies are therefore indicated before synechiae have formed and the rationale of the operation is the removal of the periphery of the iris to prevent blockage of the angle and the future synechiae.

2. In eyes on which the iridectomy had been performed with the incision made by a scalpel as is done in the LaGrange operation it was shown that the incisions were placed well in the periphery of the anterior chamber because such incisions are made by cutting from within the anterior chamber out instead of from without in as is done with the keratome. Therefore they can be made more vertically as the scalpel does not have to operate parallel to the plane of the iris. As a section of the sclera is excised also in the LaGrange operation it offers not only the advantage of removing the root of the iris to prevent blockage of the angle but also a filtration of aqueous subconjunctivally.

3. In eyes on which the trephine had been done the following complications were demonstrated which may arise when the cornea is not shelved sufficiently to allow the trephine to be placed fully half or more in the cornea—

a. Incarceration of the ciliary processes is a frequent occurrence when the trephine opening is not placed centrally enough, and probably accounts for some untoward post-operative complications particularly a quiet iritis. When the trephine enters the anterior chamber there is a movement en masse of iris, ciliary processes and aqueous toward the

opening and sometimes if the processes are in the wound they may even be excised when the peripheral iridectomy is done.

b. In the presence of broad peripheral synechiae the trephine opening may go through the site of the synechiae if the operative site is not placed well centrally. In such cases the iris fails to prolapse for excision and the trephine enters directly into the posterior chamber and may injure the anterior hyaloid with loss of vitreous or injure the lens.

4. In eyes on which the iridotasis operation had been performed it was shown that failure was apparently due to a knuckling of the iris in the wound thereby forming a blind pocket blocking the out flow of aqueous subconjunctivally. If such a situation is appreciated within a few days post-operatively then it may be converted into a successful operation by exercising the umbo or apex of the iris knuckle. It was pointed out that the rationale of the iridotasis operation is the formation of a tube or groove of iris tissue lined by pigment epithelium extending from the anterior chamber to the subconjunctiva through which aqueous passes.

Thank you very much. (Applause)

Chairman Smith: I am sure each one of us appreciates what Dr. Reese has given us, and I wonder what I would find in my own eyes sometimes if I could see them. I am glad they are somebody else's, not mine, that we are looking at today.

But we do appreciate your practical presentation of the subject, Dr. Reese, and we feel like you ought to be one of us, and I hope we are going to see you again before long.

We will proceed with the next paper, by Dr. Greene, of Asheville, "Some Remarks on Tonsillectomies." (Applause)

. . . Dr. Joseph B. Greene presented his prepared paper. . . (Applause)

SOME ASPECT OF TONSILLECTOMY

Joseph B. Greene, M.D., Asheville

I realize full well that the subject which I have chosen to bring to your attention today is a bit old and trite, so it is hardly expected that I present anything new and startling. However, there are certain aspects of tonsillectomy in which the profession is not in entire accord, and it is to these chiefly to which I wish to direct your attention. The fact that this operation is the most frequent and important and, I might add, one of the most difficult that we are called upon to perform would seem ample excuse for presenting this paper to you at this time.

Some thirty years ago when I first took up the specialty to which we belong, the profession was just emerging from the tonsillotome operation which used the MacKenzie instrument, and was entering the phase of the dissecting operation as now carried out by many members of our profession. The MacKenzie tonsillotome had for its object the removal

of as much of the tonsil as possible with a minimum of risk to the patient. It was only suitable, however, for the protruding and obstructing type of tonsil, and was entirely inadequate for the chronically infected tonsil which we are now so often called upon to remove. In the early days of the dissecting operation too little heed was paid to removal of the gland in its capsule and too little regard was paid to the delicate muscular structures surrounding the tonsil. The ideal tonsil operation is one where the gland is entirely removed in its capsule with a minimum of injury and trauma of the surrounding tissues. I might add that it is also important that the operation be performed with loss of as little blood as possible.

Sluder, in the year 1910, appreciating the difficulties incident to the dissecting operation and wishing to conserve time, presented to the profession the tonsillotome. This mechanical device made use of the angle of the lower jaw as a means of engaging the tonsil in the "guillotine," as he called his instrument. While this method was an improvement on the MacKenzie tonsillotome and has been in popular use by many members of our specialty, its disadvantages were mainly that it too frequently resulted in an incomplete operation and that there was inadequate control of hemorrhage. Sluder always insisted that his operation required both skill and experience.

Resulting from the Sluder operation there was developed the Beck-Mueller, the LaForce, the Daniel instrument, and others, which marked a distinct advance in the technique of tonsil surgery. However, it has seemed to me that such devices have the disadvantage that they are not suited for every type of tonsil, namely the quinsied tonsil and the remnants of previous tonsil operations. Then again, the lower pole of the tonsil may be missed, requiring the use of the snare. It might well be said that in many cases very excellent results follow this technique. Admitting some objection to the dissecting operation, usually completed with the wire snare, I am of the opinion that it is the method of choice. It has seemed to me that no instrument has been devised which so accurately follows the capsule as the loop of the wire snare. There are only certain types of snares which are made to carry out the technique of slow tonsil removal, thereby lessening hemorrhage. A few years ago there came into practice the electro-coagulation method of tonsil removal. The supposed advantages of this procedure was its freedom from pain and hemorrhage, but experience has failed to justify this claim and, furthermore, it is seldom that complete removal of the tonsil results from this technique.

While great advance has been made towards perfection of the dissecting operation, no one can safely claim by any method success in 100% cases. How often, upon inquiry, do we hear from patients that their tonsils have been removed three times! Furthermore, no method has been devised which can claim immunity from hemorrhage though careful and accurate removal of the tonsil will lessen the incidence of this troublesome complication. It can hardly be questioned that the slow action of the wire snare

is conducive to the clotting of blood in the vessel and the lessening of bleeding.

A careful examination should be made as to the patient's systemic condition, noting particularly any evidence of blood dyscrasia as leukemia, purpura, secondary anaemia, and haemophilia. The clotting time of the blood is important, particularly so, if associated with a history of bleeding tendency. We should ever bear in mind that this operation is not an emergency one and can be postponed for a more favorable condition of the patient.

It is important that the temperature be taken prior to the operation, a morning temperature of over 99 being sufficient grounds for postponement of the operation. Failure of the nurse to make a report of the presence of a temperature of 99½ in two of my cases resulted in the occurrence of post operative pneumonia, one of them ending fatally. The two cases were both in adults, operated under local anaesthesia.

Lung abscess is a very serious complication, but fortunately an infrequent one, and there is a divergence of opinion in our profession as to whether the infection occurs through inspiration or is embolic in character. While the weight of evidence would seem to be in favor of inspiration, yet I am of the opinion it may occur by either route. Vinson recently said that the incidence of lung abscess following throat operations has lessened since the improvement in the technique of tonsillectomy, but that there has been an increase of this complication resulting from other causes. It has always seemed to me that this sequel is most likely to follow operations associated with difficult bleeding under prolonged anaesthesia.

Although I have not made use of the suction apparatus in this operation, there is reason to believe that it affords a measure of protection against this serious complication. Ether should be the anaesthetic of choice in children under twelve or fourteen years of age, and occasionally in adults who have a terrifying dread of a local anaesthetic. Under local anaesthesia, patients should be spared all possible mental anxiety by the administration of some form of sedative, such as Nembutal 1½ grs. or Dial, an hour before operation. I am in the habit of giving also 1/6 grain of morphia hypodermically one-half hour before coming to the operating room. It is unfortunate that any opium derivative may at times produce severe nausea, so if a history of this unpleasant reaction due to some idiosyncrasy can be obtained, this medication should be withheld. It can hardly be questioned that one of the essentials of a successful local tonsillectomy is perfect anaesthesia. This, in a measure, also assures a dry field for operating. If I mistake not, the profession has pretty generally adopted the infiltration method using about ½% procaine solution, sometimes with the addition of a few drops of suprarenalin. Some objection has been offered to this addition of suprarenalin for fear of post-operative bleeding, but this dread has not been borne out by my experience. The instruments should be carefully arranged on the table before the patient enters the

operating room, and the surgeon should speak cheerfully and encouragingly during the several steps of the operation. There is no question that it lessens shock and seems to the patient to shorten the time of the operation.

The post-operative care of tonsil patients is most important, and for both local and general anaesthetic cases, I always advise several days rest in bed protected from visiting friends. For local cases some derivative of opium may be required for the first twenty-four hours and after that time Aspergum fills a useful purpose. It occurred to me if bed rest is conducive to healing in a chronic disease, such as pulmonary tuberculosis, how important it must be in an acute condition following tonsillectomy!

Hemorrhage is the most frequent and important complication of tonsillectomy and it may occur in the practice of any one who performs this operation. Tonsillar hemorrhage may be considered as primary when it occurs at the time of the operation, recurring when it takes place during the first twenty-four hours, and secondary, when it happens later, usually between the fifth and tenth days. Primary hemorrhage very rarely occurs with a local anaesthetic when massive infiltration is practiced. When a scab or slough drops off, a secondary hemorrhage may take place. Its occurrence is more likely in the presence of wound infection.

In primary hemorrhage, occurring particularly under general anaesthesia, if not promptly controlled by pressure with cotton or gauze sponge, the vessel should be caught with appropriate artery forceps. This clamping, if continued for a few moments, usually causes ample clotting in the vessel with control of bleeding. However, if bleeding continues after removal of the forceps, it becomes necessary to transfix the vessel with a small curved needle, using either catgut, silk, or linen. Simple ligation is practiced by many and is at times effective, but the ligature may come off during the act of vomiting or swallowing, resulting in further bleeding. It has seemed to me possibly to be conducive to secondary bleeding some days later when the suture, causing strangulation sloughs away.

There are cases where it may prove extremely difficult to locate the bleeding point and, when this is the case, it is much safer to obliterate the tonsillar fossa by sewing the pillars together with a curved needle, using two or possibly three rather deep sutures. For this purpose I prefer the use of the Mosher curved needle, entering through the posterior pillar. When a recurrent hemorrhage occurs in a child it is far safer not to delay too long taking the patient to the operating room where a general anaesthetic is administered for accurate control of the bleeding vessel. In case the loss of blood has been considerable, blood transfusion should be given immediately following control of bleeding. Two conditions may arise during the operation when it is wise to stop with the removal of one tonsil. I refer to the occurrence of troublesome bleeding, and also when the patient takes either a general or local anaesthetic badly. We should bear in mind that the operation is not an emergency one, and the safety of the patient is of first consideration.

Secondary bleeding which appears much later can best be controlled by pressure, after removal of the clot in the fossa. At times touching the bleeding point with a strong solution of nitrate of silver seems effective.

In reference to coagulating substances such as fibrogen, thromboplastin, horse serum, etc., I will say that too much reliance must not be placed on these hemostatic agents. In my opinion the so-called "oozing" following the tonsil operation comes from a small artery. I am also convinced that troublesome bleeding is never venous in origin. In these statements I realize that the profession is not in entire accord.

The indications for tonsillectomy are so many and are so generally accepted by the profession that I shall not take your time for their discussion, but I will say that the history of the case is more important than any informaiton gleaned from examination of the tonsil. No one can say a tonsil is innocent in the face of a history suggesting a focal infection, so it would seem that the advice of the pediatrician or family physician can safely be taken in deciding the necessity of an operation.

In conclusion I would like to speak briefly as to contra-indications. No one would proceed with a tonsil operation on a patient suffering from any severe constitutional illness, unless such disease be directly traceable to these infected glands. As before mentioned, patients with some type of blood dyscrasia should not be subjected to the risk of a tonsillectomy. If there is a history of free bleeding from slight injury, or perhaps tooth extraction, and the clotting time of the blood is slow, the operation should be postponed or abandoned.

This brings me to an aspect of the subject which has interested me greatly for a number of years—the danger of tonsillectomy in the tuberculous. While there are cases which are greatly helped towards recovery by a well-timed tonsillectomy, under local anaesthesia of course, yet I am too frequently confronted with cases where hope of recovery has been lost by an ill-advised tonsillectomy. It is obvious that patients suffering from acute pulmonary tuberculosis with the presence of temperature and a rapid sedimentation rate are not suited for tonsil removal. There are two types of tuberculosis of the throat where surgery of the tonsils should not be considered. First, in the case where there is a complication of the larynx. Therefore, it is of the utmost importance that every patient suffering from any stage of pulmonary tuberculosis have an examination of the larynx before a tonsillectomy. Second, in the case where there is an active tuberculous lesion of the tonsil. This type is evidenced by the presence of a grayish ulceration or the evidence of minute tubercles under the mucous membrane. The danger of operating in such cases is the spread of the disease to the pillars of the pharynx, a well-nigh hopeless complication. It seems to me there is only one safe way to deal with an active tuberculosis of the tonsil, and that is the application of the electro-cautery needle inserted at several points, taking care not to repeat the procedure until the elapse of three or four weeks. Two such cases are now under my professional care where the tonsillar tuberculosis is entirely arrested.

Finally, if I have succeeded in emphasizing the importance of exercising great caution in operating on the tonsils of the tuberculous, I shall feel justified in taking your time for the presentation of this paper.

CHAIRMAN SMITH: The discussion of Dr. Greene's paper will be opened by Dr. Thomas W. Davis, of Winston-Salem.

DR. THOMAS W. DAVIS (Winston-Salem): Mr. Chairman, and Gentlemen of the Society: Those of us who have been doing tonsillectomies for thirty years are especially interested in Dr. Greene's outline of the history of tonsillectomy. We have traveled the old road and we know all of the ruts.

I think we have found, as he has, that dissection with the snare is the best method of procedure to accomplish what is a good operation, namely, the removal of the tonsil and capsule, leaving the fascia covering the muscle.

From experience, I have nothing to say, but from observation, I disapprove of the method of coagulation.

Familiarizing one's self with the condition of the patient I think is most important. We cannot be too careful. Although rare, a thymus might slip by. I have seen it happen. I once knew a confrere to do a tonsillectomy where the throat refused to heal. Blood examination revealed a four plus Wassermann.

With the study of the patient there naturally arises the question of contra-indication to operation. Dr. Greene has very effectively covered this.

There is one thing I would like to mention about temperatures of 99 degrees. With a temperature of 99 degrees, or even more, I have operated, without hesitation, not, however, until I had satisfied myself that that elevation of temperature did not mean a beginning of an acute condition, and that the lungs and bronchi were negative.

I am surprised to learn that Dr. Greene does not use the suction apparatus. Am I right in that, Doctor?

DR. GREENE: Yes.

DR. DAVIS: With the head lowered and the suction used, aspiration and inspiration of blood and infectious material is reduced almost to a minimum and thereby act as a safeguard against pneumonia or lung abscess. Having the highest regard for Dr. Greene's views and practice, I congratulate myself on the fact that his and my procedure under local anesthesia is almost identical.

In regard to hemorrhage, Dr. Greene divides that, very properly, in two: the primary and secondary hemorrhages.

As to primary hemorrhage, if the fascia covering the muscle bed has been left well intact we are not apt to have very much trouble.

As to secondary hemorrhage, there certainly will be a certain percentage of cases which we would have to deal with. I believe Dr. Greene's experi-

ence coincides with mine: that pressure, whether with sponge or clamp, is usually effectual.

I am not in agreement with Dr. Greene altogether. I find that the use of Parke Davis' new serum—Neohemostatic serum—is a good general measure.

Dr. Greene emphasized the matter of tuberculosis and operating on tuberculous patients. I feel that Dr. Greene is in a position to advise us most wisely in reference to this, but I do think in those cases with a pulmonary lesion in which recovery has advanced to such a stage, that removal of septic tonsils are advantageous to the continued recovery of that patient and the general welfare of the body.

Thank you, Joe. The telephone number is Winston-Salem 7224; New York City, Murray Hill 3391. (Laughter and applause)

CHAIRMAN SMITH: The discussion will be continued by Dr. Vance Peery, of Kinston.

DR. VANCE P. PEERY (Kinston): Gentlemen, I feel more or less presumptuous in discussing Dr. Greene's paper. There are just one or two points I will touch on very briefly because, in the first place, I think a great many of us have put ourselves in the position of tonsil-snatchers.

To me, a tonsil operation is a major procedure and I say that, in looking back fifteen years ago, when I did some considerable major surgery. I would rather any day do a simple uncomplicated appendix than do a tonsil, and I have done some several thousand tonsils.

I think that any patient who is to be submitted to a tonsillectomy, be that under a local or a general, is entitled to—I won't say a complete physical survey as to all the procedures, investigating that person's physical condition or body mechanism, but I would certainly say he might have a complete history taken. That might yield us some points that would wave the red flag. Certainly, he should have an adequate physical survey. Dr. Greene has pointed that out.

As to the method to be chosen, I think all of us who do considerable ear, nose and throat work have several methods, and I would say that you should select the method with which you feel you can do the best for the patient, be that the dissection, the Sluder, or the modified Sluder.

I am quite sure that those who attempt to do a complete tonsillectomy with any of the Sluder instruments in a considerable percentage of cases will be unable to do so, because there is always an extension that goes down towards the pyraform sinus, the lateral pharyngeal wall, that you cannot get with the Sluder. In spite of the fact that Dr. French, up in Brooklyn, I believe it was, several years ago devised a rather elaborate method with blocks to fit behind the angle of the jaw and to push up all the supposedly lymphoid tissue and the infra-tonsillar fossa, I am quite sure that you cannot do a complete tonsillectomy in the majority of cases with the Sluder or the modified Sluder instruments. You have to use your snare, in addition.

I would also like to point out that connected up with the same lymphatic structure is the lingual tonsil, and in a considerable number of instances, if we don't pay particular attention to the lingual tonsil, we are not ridding that throat of its foci of infection.

The lung abscess—Dr. Greene says he doesn't use the suction machine. I cannot agree with him on that. I think Dr. Davis mentioned the position, and I think that is very important.

I think Dr. Crowe of Baltimore has an ideal position which is a modified Ross position. He has the patient with his head in his lap, just like we do in the cleft palate or hare-lip operation. I think that is not necessary but I do all of my locals and generals with the head low, with the post-nasal space the most dependent portion of that throat. Even then, I am quite sure some of that blood and some of the secretions get away from me, even with an assistant using suction.

It is a pretty difficult thing to keep that throat clean. It has been proven with endoscopy that in a high percentage, following either a local or a general, you will find blood in the trachea and bronchi if you will examine them with a bronchoscope after a tonsillectomy.

There are just one or two little tricks I have discovered that have served me well.

I got this suggestion from watching neuro-surgeons work years ago, when they first began to use coagulation and the radio knife in brain surgery, which has been a great boon in that field. Of course, it is a very easy thing to get hold of an accessible bleeding point with a tonsil hemostat, and put a ligature around it. And perhaps Dr. Greene's suture, which I don't use any more, is a safe thing to do to prevent him gagging it off, and so on. However, it isn't necessary to put a ligature around those bleeding points. Very few of us have to snap those. Pressure with a sponge will control it, and they will stay dry. But I think it is important that they all be dry before they leave the table.

It gives me a chill to see someone operate a patient and roll him out of the operating-room gurgling, because, having had some bronchoscopic experience, I am visualizing all the time what is going from the trachea into the bronchi and out in the periphery of the lung.

If you get your hemostat on the bleeding point all you have to do, if you have your radio knife hooked up, is simply touch that hemostat with your coagulating point, and let the current go down and coagulate it lightly. That is all that is necessary.

I found that particularly useful in secondary hemorrhages.

Several years ago—about eight—I had Mr. Wappley make up a long suction tube to use in the larynx with a ball at the end of it that carries the coagulating current down. It is hollow. It has a small point on the other end of it. In secondary hemorrhage, where it is coming from the base of the tongue, it is very simple to put a sponge with a little cocaine

adrenalin in, after that patient has had a barbituric, and touch your coagulating current. You cannot coagulate that point unless it is dry, but I do think the coagulating current has been of great assistance in obtaining a dry fossa in primary and secondary hemorrhage. (Applause)

CHAIRMAN SMITH: Is there any further discussion?

Will you close, Dr. Greene?

DR. JOSEPH B. GREENE (Asheville): Mr. Chairman, I appreciate the generous discussion of my two good friends, Drs. Davis and Peery.

I shall have to say, in the first place, that I did not condemn the suction apparatus. I think it is excellent but I don't happen to use it for the very reason that I have a way of holding the tonsil back in the fossa, and in that way controlling the bleeding. I didn't mention that because that is my own peculiar fad. I purposely didn't mention it for that reason. But if you hold the tonsil back in the fossa and use sponges, you won't need the suction apparatus.

That is the only thing I have to say in that connection.

I am very glad Dr. Peery mentioned the fact that the bronchoscopic examination of these patients after operation shows blood in the bronchial tree, and it doesn't matter whether the patient is in the Ross position as practiced by Dr. Crowell, or on the back, as practiced by some, or in the sitting posture, as practiced in Boston.

Thank you. (Applause)

CHAIRMAN SMITH: The next paper is, "Orbital Tumors" by Dr. W. Banks Anderson, of Durham. (Applause)

DR. W. BANKS ANDERSON (Durham): The original title of my paper has been abbreviated by the Program Committee. I think I originally called it, "Some Experiences in Orbital Tumors." Perhaps I should have said, "A Confession of Some Perplexities and Errors in Judgment in Handling Orbital Tumors."

I have a series of slides of some cases which we have seen in the last ten years. Some of them I am sure have been seen by you before, or since, and if you can add any light to what has happened to them since we have seen them I would appreciate it if you would do so after I have shown these slides.

. . . Dr. Anderson then showed his slides. . . (Applause)

ORBITAL TUMORS

BANKS ANDERSON, M.D., Durham, N. C.

I propose to utilize the time allotted me on this program in showing some 20 lantern slides which represent a series of orbital and ocular tumors that have presented diagnostic difficulties. Such a presentation of slides does not permit any set discourse and my remarks shall be somewhat extemporaneous. I hope that the members of the section, particularly those

who at any time have seen these cases, will feel at liberty to enter into the discussion either during or after the presentation of the slides referable to each case.

Case I: Coloboma of the optic nerve; retro-bulbar cyst. Slide numbers 1, 2, 3, 4, and 5.

Case II: Retro-orbital tumor—glioma of the optic nerve. Slide numbers 1, 2, 3, and 4.

Case III: Retro-bulbar hemiangioma.

Case IV: Bilateral exophthalmus—chemosis, cavernous—sinus thrombosis associated with astrocytoma brain. Slides 1, and 2.

Case V: Mixed cell carcoma of the choroid with penetration of the sclera along the posterior ciliary nerve, latent metastasis to the brain and death. Slides 1, and 2.

Case VI: Spindle cell sarcoma of the choroid erroneously diagnosed as tuberculosis. Removed after 18 months observation. Slide 1.

Case VII: Retinal angio-gliomatosis. Slides 1, and 2.

Case VIII: Huge Drusen body of the optic nerve. Slides 1, 2, and 3.

Case IX: Retino-blastoma. First considered as having extended beyond the severed end of the optic nerve. Slide re-examined after a number of years when tumor did not reoccur; probable explanation is that the tumor cells in the severed portion of the optic nerve are artifacts. Slide number 1.

Case X: Pseudo-glioma. Slide number 1.

Case XI: Unusual epidermoid tumor of the limbus. Slides 1, and 2.

Case XII: Carcinoma of the limbus. Slides 1, 2, and 3.

Case XIII: Neuro-fibromatosis of the choroid. Slides 1, 2, 3, and 4.

In conclusion these 13 cases represent a series which have, in the past ten years given us much concern. Clinical diagnosis has, in all of them, been extraordinarily difficult. Positive diagnosis has been dependent on pathological findings and in some of these cases the pathological finding has been confusing. Several of them represent errors in judgment, some, errors in surgical approach, and some perhaps errors in treatment. Those cases in which we are still unable to make a positive diagnosis may, if and when, the pathological tissue becomes available for study, further demonstrate our limitations. Many of these cases have been seen by some of you either before or after they were seen by me. If you have anything to add as to the present condition or any further light on the diagnostic problems involved, I shall be very thankful to have them discussed at this time.

Chairman Smith: The discussion of this paper will be opened by Dr. Hicks, of Raleigh. (Not present)

Is Dr. Chas. W. Banner of Greensboro here? (Not present)

Dr. Reese has agreed to discuss this paper.

Dr. Algernon B. Reese (New York City): That was a grand group of cases Dr. Anderson showed.

The case of glioma of the optic nerve in which the question of recurrence came up because all the tumor wasn't removed was an interesting one. I happen to have reviewed the literature on that not so long ago, and I know that there has never been a recurrence of a glioma. I am not speaking of a glioma of the retina; I am speaking of a real retino-blastoma. But I am speaking of a real glioma of the optic nerve—there never has been known to be a recurrence of that, and in many instances the surgeons knew that they did not excise all the tumor. So the question comes up as to whether or not the so-called glioma of the optic nerve is a real new growth. In fact, there are very good authorities who say it is not, and they give their reasons, which are many, and in detail.

Dr. Verhoff, I think, takes the attitude that a glioma of the optic nerve is not a real neoplasm, and he gives his reasons, in a recent article.

So that I think, in view of that, you would have been justified in not doing any further procedure.

In regard to the case of sarcoma of the choroid, where the tumor extended out along the posterior ciliary nerve, and there was a question as to whether or not it was in the orbit and the question of exenteration arose, that case, to me, is interesting, from two points: first, in discussion of a paper by Dr. Byers of Monreal on the treatment of sarcoma of the choroid, I heard what to me was a most interesting discussion by a group of men who had had an enormous amount of experience. The gist of their discussion—and the discussion was by Dr. Peyton of London, Dr. Arnold Knapp of New York, and three or four others equally as competent as those men in experience—was that they had never seen a recurrence of sarcoma of the choroid in the orbit. All this was prompted by a remark, or the suggestion, of Dr. Byers that more of these cases should be exenterated.

So, apparently, it is not the local recurrence we should be concerned about, but is entirely the distal cases. That was one point that interested me in that case.

The other was that this tumor was in relation to a nerve, and Dr. Georgianna Theobold is now preparing a presentation, giving evidence to support her theory that so-called melanosarcomas, or malignant sarcomas of the choroid, are really nerve tumors—arise from nerves. And this was all prompted by the work of Masson who has pretty well established that naevi, the ordinary common variety of naevi, are real nerve tumors and closely related to von Recklinghausen's. And, of course, we know that in von Recklinghausen's we do get pigment disturbance very often.

In other words, Dr. Theobold is trying to put out the idea that von Recklinghausen's, which is a nerve tumor, and that naevi, which are apparently nerve tumors, hook up with these sarcomas of the choroid which are also of the nerve, and if I may take the liberty of doing so I shall write Dr. Theobold and tell her about this case because she could,

with your permission, I think, write to the Army Medical Museum and they could let her study it, and I am sure she would be very much interested in doing it. (Applause)

CHAIRMAN SMITH: I see Dr. Banner has come back to discuss Dr. Anderson's paper.

DR. CHAS W. BANNER (Greensboro): Mr. Chairman: I was quite interested in the group of slides that Dr. Anderson has shown us this afternoon. It impresses us with the fact that we may find almost any kind of tumor, both malignant and benign, in the orbital cavity. I had not seen these slides and had not discussed them with Dr. Anderson, but would like to congratulate him on getting together such an interesting group of cases.

One of the things that impresses me in regard to the tumors in and around the orbit is that usually they are accessible and often, where they attack the eyeball itself, we may be aided to an early diagnosis by use of the Ophthalmoscope, and by noting the extent and direction of the exophthalmos we are able to make a diagnosis much earlier in some of these cases than we are in tumors that are less accessible.

I think perhaps the Gliomas' have given me more concern than any of the other orbital tumors. It seems that with all the care and attention that we can give them, they go on uninterruptedly to destruction. I had one of these cases recently and, although we found it before it had broken through the eyeball and we did a complete exenteration and followed this with radium and X-ray, still the case went on and the child died in spite of all we could do.

In other malignant cases in the orbit I have usually been able to stop the growth and cure the patient by a complete exentration of orbit. Thank you.

CHAIRMAN SMITH: The last paper is by Dr. L. M. Griffith of Asheville, entitled, "Conservation in the Treatment of Sinuses."

DR. L. M. GRIFFITH (Asheville): Mr. Chairman and Gentlemen: I have changed the title of my subject a little bit, although it does deal essentially with conservatism in sinus work. I am attempting here an analysis of four hundred and four consecutive cases of maxillary sinusitis.

. . . Dr. Griffith presented his prepared manuscript. . . (Applause)

FOUR HUNDRED AND FOUR CONSECUTIVE CASES OF MAXILLARY SINUSITIS—A CLINICAL ANALYSIS

L. M. GRIFFITH, M.D., Asheville

I am attempting this analysis to determine if any points of value can be learned. I give it for what it is worth. First will be submitted statistics, then a survey as to what they may mean.

The four hundred and four cases of maxillary sinusitis to be considered are made up of three hundred and sixty-eight cases of acute antral infec-

tion, sixteen cases of chronic antral infection on which radical antrum operations (Caldwell-Luc) were done, eight cases of chronic antral infection which refused radical surgery, and twelve cases of acute antral infections on which window openings beneath the inferior turbinate were made. As practically every case of either maxillary sinus or frontal sinus inflammation has accompanying involvement of the ethmoid sinuses of the same side no attempt has been made to separate or to consider the purely involved ethmoid cases. During the time interval covered by these four hundred and four cases of maxillary sinusitis, thirty-six cases of frontal sinusitis were encountered—a ratio of eleven antral cases to one frontal sinus case.

The three hundred and sixty-eight acute antral cases were limited one hundred and seventy-one to the left antrum, one hundred and forty-one to the right antrum, and fifty-six were bilateral. The treatment other than constitutional was antrum puncture with Coakley antrum punch followed by irrigation with a sterile normal salt solution. This puncture and irrigation was repeated at two day intervals until no secretion was washed away. Ninety-three of the cases had one antrum irrigation and were rid of their trouble, eighty had two irrigations, forty-seven had three irrigations, forty-two had four irrigations, twenty-eight had five irrigations and on to the one with the greatest number of irrigations before well which was a bilateral case with seventy-seven irrigations of each antrum. The end result in this last case justified the work for that patient, the wife of one of our prominent physicians, does not have any residue resulting from her antrum infection. The total number of antrum irrigations on these cases was one thousand five hundred and sixty-eight, an average of little better than four irrigations of each case.

The radical antra operated do not need any special comment except to note the proportion of chronic antra encountered, three hundred and seventy-eight acute as opposed to twenty-four chronic.

A window opening beneath the inferior turbinate was used in twelve of the antrum cases. Four of these were so operated because they showed evidence of chronicity, in that they had not responded to numerous irrigations. Four had window openings made because a closed empyema was present which could not be irrigated. This means that the normal osteum in these cases was swollen shut and following antrum puncture, irrigation could not be done because fluid could not be forced through the normal opening. Each of these cases made rapid recovery when irrigations were instituted through the window opening. The remaining four cases in this group happened in children with unilateral exophthalmos dependent upon antrum and ethmoid infection. They were done under general anaesthesia and window openings made because it was appreciated that several irrigations would be necessary. In the child this could be much easier done through window openings than through the small perforation of the antrum punch.

I would like here to analyze the five cases of unilateral exophthalmos which occurred in this series. I realize that five such cases in so small a number as this under consideration is a high percentage. In that the results were very gratifying I feel fortunate to have been able to handle this group.

Case 1: Baby Gates. Age 18 months—marked exophthalmos left eye, temperature 104°. Physical examination negative except for the exophthalmos and swelling of lids of left eye, much congestion both nostrils with profuse muco-purulent discharge. Treatment: Nose shrunken with 3% cocaine solution containing 3 drops of 1:1000 solution of adrenalin chloride to each ounce; then gentle suction applied; cocaine solution instilled into each nostril every three hours. Suction was applied twice daily, uneventful recovery. In five days free of fever, exophthalmos relieved. In ten days no nasal discharge. Diagnosis: Ethmoiditis acute bilateral, exophthalmos left eye.

Case 2: Miss W. R. C. Age 18—marked exophthalmos left eye, temperature 101°. History of recent influenza. Physical examination negative except for the exophthalmos and profuse muco-purulent discharge both nostrils. X-Ray of para-nasal sinuses showed involvement of both antra, ethmoids both sides and left frontal sinus. Treatment: Under ether anaesthesia external opening about size to admit index finger made into left frontal sinus, pus under great pressure popped out as soon as opening was made. Window openings were made into each antrum. Following this, daily suction was applied to the ethmoids accompanied by irrigation of the antra with normal salt solution. The opening into the frontal sinus was kept open until all secretion ceased. The exophthalmos in five days was entirely relieved.

Case 3: L. C. Age 8—marked exophthalmos left eye. Temperature 102°. General physical examination negative. Left eye showed marked exophthalmos with swelling of lids, congestion of left nostril with muco-purulent secretion. X-Ray of para-nasal sinuses showed involvement of left antrum and ethmoids. Treatment: Under ether anaesthesia window opening made into left antrum, left antrum irrigated with normal salt solution, daily suction applied and daily irrigation of left antrum then done. Next day exophthalmos much improved. Continued recovery uneventful.

Case 4: Mary H. Age 8—marked exophthalmos left eye present 24 hours, temperature 100°. General physical examination negative. Left eye showed marked exophthalmos with swelling of both lids. Left eye forward and to temporal side. Nose, congestion both nostrils, muco-purulent secretion. X-Ray of para-nasal sinuses showed involvement of both antra, left frontal and ethmoids both sides. Treatment: General anaesthesia, window opening inferior turbinate into each antrum, irrigations of both antra with normal salt solution. Following this, two irrigations of antra done on

successive days and suction applied to nose for ten days. Third day following anaesthetic operation exophthalmos had practically receded.

Case 5: C. B. Age 15—marked exophthalmos left eye present two days. Temperature 101°. General physical examination negative. Nose, congestion both nostrils, profuse muco-purulent secretion from left nostril. X-Ray of para-nasal sinuses showed involvement of left antrum and ethmoids. The left eye protruded forward, temporally and up. Treatment: Under ether anaesthesia window opening beneath left inferior turbinate was made, left antrum was then irrigated with normal salt solution, rubber tube inserted into left antrum. Following operation, left antrum was irrigated at three hour intervals by the nurse through the tube left in the window opening. Recovery uneventful.

The above exophthalmos cases have been given in detail to stress the conservative treatment used. As you note, no cutting operation on the ethmoid sinuses was done in any case. The results of conservative treatment here secured bear out the point stressed by Cohen in a recent paper on inflammatory exophthalmos. He says, "The severe acute and subacute infections of the orbit require conservative treatment unless focalization and suppuration are evident. Until then the main therapeutic measures should be concentrated on the sinuses."

I wish now to consider ten of the patients in this series who have been subject to repeated attacks of maxillary sinusitis. Of these ten, one has numerous bad teeth right upper jaw which should be extracted but which he will not have done. This patient will only come for antrum irrigations until the acute symptoms subside. Then, although the antrum is not entirely well, I will see no more of him until another acute exacerbation of pain and discharge. The bad teeth are probably the cause of his repeated attacks, though an allergic factor can not be ruled out entirely. The remaining nine patients are each highly allergic, which is corroborated by the appearance of the nasal mucosa, by the history of asthmatic attacks, by the history of eczema, and by their sensitiveness to foreign proteid skin tests. These patients, the only ones in the group with repeated attacks of sinusitis, I think warrant the statement that patients who have repeated attacks of sinusitis are highly allergic. Hansel states that "observations on the cytology of the nasal secretions in allergy have shown that the patient who has the chronic manifestations of allergy in the nose and para-nasal sinuses is subject to repeated acute infections."

Of the four hundred and four cases of maxillary sinusitis analyzed, twenty-nine of the infected sinuses were caused by bad teeth. That is 7.18% of the cases were of dental origin. Skillern placed in 1923 the incidence of antral empyema due to dental infection at approximately 20%. At one time it was thought that every case of antral empyema was directly due to dental infection. Tilley in 1904 placed it at 100%. Dutrow in 1920 placed it at 65-75%. Hajek in 1908 placed the incidence at 8%. Berry in 1928 in a study of one hundred and fifty-two patients with sinus

disease, concluded 18% of the cases of proved dental origin, 30% of probable dental origin and 41% of possible dental origin. In a study of seventy-three additional cases reported in 1930 Berry concludes that 22% proved, 37% probable, and 33% possible to be of clinical origin. In other words, Berry as late as 1930 is convinced that the big majority of cases of antrum disease are due to diseased teeth. My finding of only 7.18% of this series of four hundred and four cases to be due to bad teeth is at marked variance to that of Berry. I can only say this, that three hundred and ninety-four of the cases in this series were entirely well when discharged by me. The ten cases not considered cured are one with carcinoma of the right antrum, the eight cases who refused radical operation and the one case mentioned who had repeated attacks which I consider probably to be dependent upon teeth with root abscesses. An antral empyema of dental origin will not resolve until the offending tooth is extracted. Certainly every case of maxillary sinus infection requires from the beginning attention as to whether a tooth or teeth are the cause of the infection. Each of the above cases was carefully examined from that viewpoint. If under treatment there was undue delay in resolution the teeth were re-examined.

Nineteen of the four hundred and four antrum cases had an associated acute ear inflammation. This is 4.7%. This percentage of such association is definitely less than that encountered by some clinicians. I feel that every patient with ear inflammation should have examination of the sinuses to determine if any involvement.

In the treatment of these cases several untoward events happened. At first irrigation of one case, being done for diagnosis only, there was immediate closure of the eyelids and puffiness of the cheek of the same side due to emphysema. In this case air was injected through the antrum cannula before the irrigation was started. This is an accident to be rarely encountered in doing antrum irrigations. Another unusual happening was that while doing an antrum irrigation the patient remarked, "Doctor, the water is coming out of my eye." This I did not think possible, so I washed with another syringe of salt solution. The patient was right—the fluid did come out through the punctum of the lower canaliculus. This happening I do not yet understand. The cannula seemed to have its end free in the antrum cavity. This patient had had several previous antrum irrigations, with no such happening. He is included among the ten patients who had repeated acute attacks of maxillary sinusitis. Once when doing a Caldwell-Luc operation on one of the chronic cases just after removing a portion of the bone beneath the inferior turbinate preparatory to making the opening into the nose, persistent bleeding of such proportions was encountered that it was decided to pack the antrum and complete the operation at a later sitting. This was done two days later when no bleeding was encountered. The operation was under local anaesthesia.

SUMMARY

These cases I consider to have been handled conservatively. In that the results were good I feel that conservative surgery in maxillary sinus disease is worth while. Do not misunderstood me—no antrum or frontal sinus containing polyps will be cured except by radical curettement. Also many with a purely infectious basis will need radical surgery.

Only one case of malignant new growth was encountered in this series of antrum cases. Every case of antral disease that does not respond to treatment should be opened for inspection. Then the malignant disease, if present, will be diagnosed earlier with more hope of cure.

The outcome in the cases of acute exophthalmos justified the conservatism practiced. Those cases were all seen early, before suppuration within the orbit had begun.

Patients who have repeated attacks of sinusitis are allergic persons.

Teeth in this series of cases were not as frequently the causative agents in the onset of the antral infection as has been generally taught. Only 7.18% of the cases were so caused.

Not as many associated ear inflammations were encountered as reported by some observers. An ear inflammation was associated in 4.7% of the cases.

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Chairman Smith: Dr. H. C. Shirley, of Charlotte, will open the discussion on this paper. (Applause)

Dr. H. C. Shirley (Charlotte): Mr. Chairman and Gentlemen: When I read Dr. Griffith's paper it was a great pleasure and a source of satisfaction to me that his statistics and his method of treatment were essentially the same as my own.

Since it is late and hot and we are all tired, I am not going to detain this meeting by going over methods of treatment in which I concur. (Applause)

Chairman Smith: The discussion will be continued by Dr. W. E. Brackett of Hendersonville.

Dr. Brackett: Mr. Chairman, I want to commend Dr. Griffith on his excellent paper and also on the big percentage of cures that he gets. I think it is a very interesting paper.

I would like to state that my treatment is about the same as his. There is very little variance.

I should like to say just one thing and that is that patients with sub-acute sinusitis dislike very much to have a trocar plunged through their nasoantral wall every other day and I think they respond better and quicker by making a nasoantral opening.

There are two reasons for that: First, I feel that the entrance of air is a great adjunct toward healing this diseased antral cavity. The second is the ease with which future irrigations can be carried on.

Another striking thing is this: for the past year or two—or the past two or three years—it seems to me that we have seen lots less chronic sinus conditions than we did ten or fifteen years ago. I think the reason for this is that folks are becoming better educated to what a diseased sinus may lead to and are having them treated while they are in their acute stages.

As I say, I did read Dr. Griffith's paper—he was kind enough to send me a copy before I came down here—and I prepared a little discussion on it. In my hurry to get away yesterday I came off without it. (Laughter)

I enjoyed Dr. Griffith's paper very much. (Applause)

CHAIRMAN SMITH: Is there any further discussion?

Will you close, Dr. Griffith?

DR. GRIFFITH: I have nothing further to add, Doctor.

CHAIRMAN SMITH: Is there any new business?

Gentlemen, I understood there was a matter to be brought up here this afternoon. I was given a copy of a resolution that was to be presented here this afternoon by Dr. Hicks.

DR. CHEEK (Executive Secretary, Commission for the Blind): Dr. Hicks, of Raleigh, was to be present to offer that resolution. He just sent word that he couldn't get here and he wants you to take action on that.

CHAIRMAN SMITH: Do you have charge of this?

DR. CHEEK: Yes.

CHAIRMAN SMITH: Would you like to explain it?

DR. CHEEK: I had not expected to do so but I think I can take the resolutions that have been prepared and explain them briefly.

You men are all tired, I know, and I am just going to take a minute of your time. If you would prefer not to pass on this this afternoon, since Dr. Smith said, I believe, you have not read over this project, you might wish to appoint a committee to go over this and give them authority to act.

Dr. Cooper said, I believe, in discussing it with some of you men last night that it was suggested that you appoint a committee to investigate it and report back at your next annual session, but if you do that, the possibility of getting these funds will be gone, because as I understand from Dr. Rice, there are going to be four or five states selected to make a study

of the causes of blindness and this project was drawn up in the hope that North Carolina might be one of those four or five states.

The project provides that the ophthalmologists in diffect sections of the state should take care of the examination of the people in their respective sections. We have recently completed a survey which shows that there are 6080 cases of blindness, and this project would include those cases and the most seriously affected children, and the ophthalmologists throughout the state would take care of the examinations, which is somewhat different than it is in some other states.

There is also a possibility of getting through the Children's Bureau funds for examination to match the funds of the State Commission for the Blind.

A number of doctors—I believe twelve in all—have held clinics in cooperation with the State Commission for the Blind and, as you know, the only persons admitted to these clinics have been certified charity cases, cases certified by the Superintendent of Welfare and by some doctor in the county, either a private physician or a county physician.

The doctors have given their services free to these charity cases, just as they have always done, but we have paid twenty dollars a day to those doctors within their own counties, and twenty-five to doctors outside of the counties, to take care of the costs of the instruments involved and other expenses accruing to the doctors in being away from their offices.

There is a possibility, we think, to match this, (so that there would be forty dollars per day available for doctors in their own counties and fifty dollars when the doctors go outside of their own counties) with Federal funds.

This resolution was drafted rather hurriedly, in consultation with Dr. Hicks. I don't know whether you want that read or not, Dr. Smith.

Chairman Smith: Please read it.

Dr. Cheek: "Whereas, during the past year, the North Carolina State Commission for the Blind has been holding eye clinics in cooperation with North Carolina ophthalmologists for certified indigent cases, in which the Commission has been paying an honorarium to take care of the cost of instruments and other actual costs involved to the doctor, of $20.00 a day to an ophthalmologist holding a clinic in his county, and $25.00 a day when he goes out of his county. Only charity cases (certified by a doctor and superintendent of welfare to be unable to provide medical attention for themselves) attend the clinics; and

"Whereas, there is a possibility of matching these funds with Federal funds so that there would be an honorarium of $1.00 per person examined, as well as the honorarium from the State Commission for refraction and other services, so that, in most cases, the honorarium receivable would be double the present amount; and

"Whereas, in some states, commissions for the blind have employed a

state-wide ophthalmologist, but it is felt that the work can be much more satisfactorily done in North Carolina through the various ophthalmologists working in their own districts and taking care of these charity cases at times that are most convenient for them; and

"Whereas, Federal funds can be used only for examination, and not for refraction, operation and treatment; and

"Whereas, preventive eye health is very important in the field of preventive medicine; and

"Whereas, through such a program, parents and others able to pay for services, but negligent, can be convinced of the need, there is a possibility of securing Federal funds for the salary and travel expenses of one nurse to work in this field; be it therefore

"RESOLVED, That the members of the Ophthalmological Division of the North Carolina Medical Society do hereby approve the request for and the use of Federal funds for the above-mentioned services to be administered through and under the supervision of the North Carolina State Board of Health."

These funds would come to the State Board of Health entirely, rather than through our Commission, and of course would be administered under their supervision.

Dr. Reynolds and Dr. Cooper are familiar with this and they have had this project for several days and have studied it, as well as these resolutions.

Are there any questions? If there are, I will try to answer them for you.

Dr. John W. MacConnell (Davidson): I would say that we didn't lose anything by Dr. Hicks not being here. He has sent an able representative, and she has explained the matter very clearly. But since there is such a small group here now, I would move that a committee be appointed with power to act in the interim so that this business can be attended to promptly, rather than have it acted upon now by this small group.

. . . The motion was duly seconded. . .

Chairman Smith: You have heard the motion which has been duly seconded. Is there any discussion?

Dr. Bailey (Rocky Mount): Mr. President, since the practice of medicine has been carried on so satisfactorily in the past by reference from the family physician to the specialist of those cases who are unable to pay fees, I personally am in favor of that principle continuing, that is, having these cases referred to the specialist by the family physician. And, gentlemen, I tell you he is the only man who can be trusted—the family physician. We cannot trust these welfare officers, the Social Security agents, and one thing or another. The only person whom we can trust is the family physician. And if the family physician recommends these patients being incompetent to pay, then that is the only thing upon which we can rest.

I would suggest, if it be advisable to appoint a committee, that that committee take into consideration the fact that the family physician is the only person whom we can trust to recommend these patients. I will acquiesce to the appointment of a committee, but the point that I wish to make, very definitely, is that if we have these patients referred to us, the family physician be the only person to refer them, and that we do not hire ourselves out at so much per day.

If any of the rest of you care to do that, okeh, but, personally, I wouldn't do it. I wouldn't hire myself out at so much per day to anybody.

I think it is very much of a detriment to our profession to hire ourselves out at so much per day. Let them come in, as in ordinary practice, with a note from their family physician recommending them as deserving of charity, to be treated with no fee charged.

We don't care to enter ourselves on the Federal payroll. That is selling ourselves across the bar, for nothing.

Personally, I am opposed to anything other than the regular practice of medicine; that is, the general practitioner referring cases—pay or otherwise—to whom he desires, to the specialist of his choice.

I would like to submit that principle to you gentlemen.

Dr. H. L. Sloan (Charlotte): I think this thing has been sprung on us so suddenly, we should be allowed a little time at least to discuss it. Dr. Cooper tells me he is familiar with the facts. I met him out here in the hall and he told me so. If we have to act on this tonight or tomorrow we might appoint a committee to confer with him. I am sure Dr. Cooper will present the facts as they are, and the committee that is appointed can then decide what they want to do about it.

I think this proposition should be examined on its merits, and no other consideration should be allowed to enter in. I am sure we can get the facts from Dr. Cooper because I just spoke to him out in the hall. He asked me what I thought about it. I told him I didn't know anything about it. He said, "I would like to tell you about it."

I said, "This thing is under discussion now. Let's hear from you later."

Dr. MacConnell: Since I made that motion and Dr. Bailey spoke in regard to it, wouldn't it be better, Dr. Bailey, if you want to instruct your committee, to just incorporate in the motion that it is recommended that the patients come by way of the family physician? But I don't believe it is really necessary, Dr. Bailey.

Understand, I am not a New Dealer—I want you to understand that—but wouldn't it be better not to say that you don't trust anybody except the family physician, because there are certain welfare workers that I do trust, and I wouldn't want to say I wouldn't trust any of them?

Couldn't you instruct the committee to say that the patients be recommended by the family physician? Wouldn't that meet your point and also get the work done?

Dr. Cheek: Dr. Bailey, I might say for your information that this blank certifying them calls for the signature of a county or private physician. And in a great majority of the cases, in addition to the county physician signing them, they have been signed by private physicians, and have come through just the channel that you have recommended.

Dr. C. L. Crump (Hickory): Mr. Chairman, to me this whole proposition smacks of the first step we could make towards state medicine. It is coming fast enough. Why help it along?

The resolution submitted calls for examination only. What are you going to do with these people that have to be operated on? You have to treat them as charity patients, anyway, so why go through all this rigamarole? If we get them in under Government funds, that is just where they want us.

I am not in favor of this.

Dr. M. R. Gibson (Raleigh): Talking to Dr. MacConnell's motion, I will say that a committee can work this out better than we can here at this time, with so little knowledge of just what we have to deal with. I therefore suggest that we pass the resolution and give the committee a chance to work it out and see what is the best thing to do. That doesn't mean that the committee is going to be in favor of it, but they are going to work it out and see what is the best thing to do.

Dr. Bailey: Mr. Chairman, I would like to say again that the interest of the specialist in this branch of medicine, as in every other branch, is centered in the general practitioner, who refers cases to him. No one other than the general practitioner has our interest at heart.

Gentlemen, I tell you the welfare officer and the Social Security agent cannot be trusted. So far, I have not known of one that can be trusted. Maybe there are some. If there are I do not know them. Personally I know of none that can be trusted. In fact, I know of no one other than the general practitioner that can be trusted.

I would like to make a motion that if you appoint a committee, it be instructed to leave it entirely in the hands of the general practitioner to refer cases to the specialist.

I think that our salvation rests on that one point: that these cases be referred from the general practitioner. We cannot as I say trust the Social Security agent or the welfare officer. I have seen them fail too often. The general practitioner may fail occasionally. But he will not fail often.

We are willing to take care of these cases when they are deserving, but we cannot afford to enter on the payroll of the Federal Government. Personally, I say, "To hell with Roosevelt and his Social Security program." Although I am a Democrat, gentlemen, (laughter) I say that. I believe in leaving the practice of medicine in the hands of medical men. Let the practice of medicine remain in the hands of the general practitioners and let them refer their cases to the specialists, be it wise or otherwise. That

is the way it has gone on these many years, and we have progressed, gentlemen, under that system. I tell you that is the only principle on which we can trust our welfare and the patients' welfare.

I suggest that if you appoint a committee that that one principle be incorporated: that patients shall come only through the written recommendation of the family physician that they are deserving, or otherwise. I so move.

CHAIRMAN SMITH: Dr. Bailey, I believe there is already a motion before the house.

DR. W. P. SPEAS (Winston-Salem): Mr. Chairman, it is unfortunate that a thing of this kind has been brought up here so unexpectedly, with us knowing so little about it. I should like to ask the young lady one question about it. Is this to be adopted as a matter of policy in North Carolina, or is it an experiment which will last for a year or two.

DR. CHEEK: This use of Federal funds will be just an experiment to last a year or two. It is just a temporary project. It is a study of these people that have one-tenth, or less, vision, and those that are more seriously affected.

MEMBER: This is a yardstick, I guess, to be used perhaps in adopting a national policy, or something like that, if it is successful here. If it is a good thing, I think we should adopt it, and if it is something which the medical profession does not care for, I don't think we should adopt it.

I don't think we should give a committee power to act on this thing. I realize that time is short, and it is unfortunate that the profession was not made acquainted with this thing somewhat before the last moment we have in which to all consider it together.

I am in favor of appointing a committee, but I am opposed to giving them power to act on this. In other words, I don't think we should let a committee of two, three, or four men act on this thing for the Section.

DR. GIBSON: It has to be one or the other. We have to give this committee power to act, or we have to reject this thing. We must do one or the other.

As I see it now, it is possible that this committee, with the State Board of Health, can work out a workable project, on the basis of what has been presented here this evening, and give us something that would be just as favorable as the orthopedic project, about which I have some knowledge, and which has been working well for a good many years. It might be just as acceptable to the State Board of Health. And yet if we do not give them the power to act, I don't see that we can do anything about it for another year.

DR. H. C. WOLFE (Greensboro): We are to have a meeting of the North Carolina Eye, Ear and Nose Society in October. It looks to me like it might be a good idea to appoint this committee and let them report back to that organization at their meeting in October. That will give us

four or five months to think this thing over and study it. I believe that would be the best solution of the proposition. I don't like for us to pass on something here so swiftly that we don't know anything about and that we haven't had time to think about.

We had some resolution like that come up last year. I don't know whether it was in connection with this same thing or not. But I think it would be a good idea to appoint a committee and let that committee report back to the North Carolina Eye, Ear and Nose Society at its meeting, as that organization is composed mostly of the members here, anyway. It is the same animal, in a different coat. We can in that way have some time to think about it.

Chairman Smith: I am not sure that the North Carolina Eye, Ear, and Nose Society would have the same force as a section of the North Carolina Medical Society has. But, at any rate, right now we have before us Dr. MacConnell's motion.

Dr. Clarence N. Peeler (Charlotte): Mr. Chairman, we all of us know Dr. Cooper. He has been with the State Board for, lo, these many years. Some of the older ones of us worked under his supervision in our tonsil clinics over the state. When the medical profession, when the specialists said, "Stop those clinics," Dr. Cooper said, "Hands off!" He is with us.

As I understand it, Dr. Cooper wishes this thing to come under the supervision of the State Board of Health, and yet under that supervision we may secure some funds from the Federal Government.

We all know that there is a need in the state for this work. At least, those of us who have looked into it and have done some of this work know there is a need for it.

As I see it, this is not a tendency towards state medicine at all. This is a project of the State Board of Health to take care of our blind, to have them carefully examined and, after they are examined, cared for by their family doctors, who will direct them to the specialist he chooses, the funds made up in the county, by the county, for private individuals to take care of those cases.

Dr. MacConnell's motion is not to adopt this thing, but it is to appoint a committee to go into the pros and the cons of the thing, to study the thing carefully, because if we all had this literature for a month and had an opportunity to read it over we couldn't come to any decision about it. There would be some on one side and some on the other. On the other hand, if you appoint a committee of three, four, or five men and let them work it out, they will come to a satisfactory decision, in cooperation and collaboration with Dr. Cooper. In that way, our state can be benefited, and we will not be hurting ourselves.

Dr. W. E. Brackett (Hendersonville): I would like to say that I thoroughly agree with Dr. Peeler. I know a little something about this. For

instance, the Kiwanis Club in Hendersonville is ready right now to take care of fifty patients, provided they can't go to school without the use of glasses. They will pay for them.

I cannot see why the eye men in the state should deny these children the privilege of getting to school.

DR. SLOAN: Dr. MacConnell is not saying that he is in favor of this proposition. He wants this committee to be appointed which will go into conference with Dr. Cooper about this matter, and I say that is the source from which we can get the facts, unbiased.

I move the previous question.

DR. L. M. GRIFFITH (Asheville): We are all of us in favor of doing what we can for our blind people. We are doing everything we can for them, for nothing. As a matter of fact, we examine the eyes of children for nothing: However, we can go too far with this thing. For instance, let me tell you what happened in Asheville.

We had school children come in, presenting a little ticket. On the ticket it was intimated that we, the ophthalmologists of the state, in cooperation with the Society for the Prevention of Blindness, would examine these school children, free of charge. What happened was this: these cards, sending them to an ophthalmologist were handed out by the school teachers or by some other social workers. We never did learn where they got the cards from. We couldn't trace them down. I think some of the men examined those children, even though they were not entitled to free examinations.

It is just as Dr. Bailey has pointed out: although this thing is for prevention of blindness and conservation of eyesight, and all that sort of thing, the first thing we know we are going to be examining every school child in North Carolina for a dollar a head, or perhaps two dollars a head. I would rather do them for nothing, than for that.

It is just an entering wedge, I feel, as has been stated by some of the other men, to state medicine. But this discussion has been well worthwhile, so if you do appoint a committee to go into this they will know how we feel about it.

CHAIRMAN SMITH: Is there any further discussion?

. . . The question was called for. . .

CHAIRMAN SMITH: The question has been called for. We have before us Dr. MacConnell's motion. Will you restate it, please, Doctor?

DR. MACCONNELL: Mr. Chairman, my motion was simply that the Chairman appoint a committee, with power to act on this question.

DR. BAILEY: A committee of how many?

DR. MACCONNELL: Five would be a good working committee, it seems to me.

DR. CRUMP: You mean a committee with power to reject or accept this proposition?

DR. MACCONNELL: Yes. I think that just about covers everything.

I wasn't arguing pro or con the methods, or the fees, but I was just trying to get some procedure by which we could get action on it, because it is up to us to do something.

DR. GIBSON: Before that is put, I would like to offer an amendment that this committee that is to be appointed be empowered to submit to the State Board of Health this recommendation that has been made by Dr. Cheek. If that is not acceptable, that some plan that is acceptable to the State Board of Health be adopted.

CHAIRMAN SMITH: Will you accept that amendment, Dr. MacConnell?

DR. MACCONNELL: I will accept that.

DR. BAILEY: Mr. Chairman, I would like to ask that this recommendation of the Committee be reported back to the meeting of the Eye, Ear, Nose and Throat Society in October, or to each doctor who is a member of this Society, by letter, and allow them the privilege of voting on this proposition.

I tell you gentlemen once more that this social welfare officer cannot be trusted, nor can the county commissioner recommending these things be trusted. The only person, as I said before, that can be trusted is the family physician, and he can't be trusted one hundred per cent. But he is our best bet. (Laughter)

We are very willing to do this work, but we don't want anybody telling us what we have to do. We are willing to do the work for those cases that are deserving, but, gentlemen, damn that man who tells us we have to do it.

I wouldn't do this work on the basis that is proposed, myself. Any of you who want to can hire yourselves out to the state by the day. You can come into my territory and do it, any of you who want to. Personally, I will not do it. I am willing to do my part to help these poor, deserving cases but, personally, I will not hire myself out by the day to do any of this work.

And again I say, to hell with Roosevelt. (Laughter)

I would like to have the report of that committee referred back to that meeting in October, and I offer that as an amendment to the doctor's motion.

DR. MACCONNELL: Doctor, I cannot accept that amendment because it is too far afield from the subject of the motion. Another reason is, as the Chairman has said, the North Carolina Eye, Ear, Nose and Throat Society has no official standing. Still another reason is if there were a man in my territory, I would be perfectly willing to recommend patients to him, and you would be, too.

It isn't a question of hiring yourselves out by the day. It is a question, it strikes me, of the best way to conserve the eyesight and do something for the 6,100 blind people in our state.

We have all been taken for easy marks—you and I both. I know that and you know it. Yet, so far as that is concerned, there is nothing to prevent their putting a man out in our territory to do this work, whether we like it or not. They can do anything they want. That is the reason I am not saying, "The hell with Roosevelt." He is the Commander-in-Chief of the Army and Navy. He has too much power.

I cannot accept your amendment.

CHAIRMAN SMITH: All those in favor of the motion as amended by Dr. Gibson say, "Aye," all those opposed, "No."

We will have to have a standing vote on that.

DR. BAILEY: Please restate the motion.

DR. MACCONNELL: My original motion was that a committee be appointed, with power to act.

I would suggest that Dr. Gibson state his amendment, which was accepted by me.

DR. GIBSON: My amendment was that this committee that is appointed go into conference with the State Board of Health, and that if the recommendation is not acceptable to them, they arrive at some plan that would be acceptable to the State Board of Health and the representatives of this Society; that if such a plan were acceptable, we would be behind them in this Society. In other words, give them authority to make arrangements with the State Board of Health for some working arrangement whereby we would get this benefit from the Government. Otherwise, we are going to lose this benefit from the Government.

DR. GRIFFITH: We don't want it.

CHAIRMAN SMITH: All those in favor of the motion as amended please stand. (Eighteen arose) All those opposed please stand. (Eleven arose)

The motion is carried.

I would like to have a few minutes before I appoint that committee.

Is there any other new business?

DR. JENNINGS: I would like to make a motion that that committee make an informal report to the meeting of the North Carolina Eye, Ear, Nose and Throat Society in the fall so we will know what has been done, instead of having to wait until next year, or getting it through hearsay.

CHAIRMAN SMITH: I don't believe, Dr. Jennings, that would be in order, would it, now that the motion has been acted on and carried. But I will personally see to it if you wish that you get that report when I get it from the Committee.

DR. JENNINGS: That is fair enough.

DR. BANNER: Why not have that report—after the committee makes its contact with the State Board of Health and acts on the thing—referred back, in a letter, to each member of this Society, rather than to the North Carolina Ophthalmological Society?

CHAIRMAN SMITH: That is what I agreed to do, myself. I will take care of that.

Is there any further business?

I believe the next item is the election of officers. We have been in the custom, I believe, of nominating them from the floor.

DR. GRIFFITH: Mr. Chairman, the first office I guess is that of Chairman of the Section. I would like to place in nomination the name of Dr. A. C. McCall of Asheville for Chairman of the Section.

. . . The nomination was duly seconded. . .

DR. CRUMP: I move the nominations be closed.

. . . The motion was duly seconded, put to a vote and carried. . .

CHAIRMAN SMITH: All those in favor of the election of Dr. McCall as Chairman please say, "Aye." Dr. McCall is unanimously elected. (Applause)

CHAIRMAN-ELECT MCCALL: Gentlemen, I thank you all. I am awfully glad Dr. Smith has this other job—that that didn't fall upon my shoulders.

If you will all cooperate with me this coming year as you did with Dr. Smith this past year, we will have a good meeting next year. We have had a splendid meeting this year, and Dr. Smith is justly proud of it. He certainly is to be congratulated upon having done so well. When you are contacted two or three months before the date of the next meeting, kindly answer the letters promptly, so that the papers can be selected. We don't want to have too many papers—just enough to round out a good afternoon's program.

I again thank you.

I shall certainly listen to anything that any member of this Section brings to my attention.

The next officer to be elected is the Secretary. Nominations are in order from the floor.

DR. JENNINGS: I nominate Dr. Briggs, of Asheville, as Secretary.

. . . The nomination was seconded by Dr. Crump. . .

CHAIRMAN-ELECT MCCALL: Are there any further nominations?

. . . It was voted, upon motion duly made and seconded, that the nominations be closed. . .

CHAIRMAN-ELECT MCCALL: All those in favor of the election of Dr. Briggs as Secretary indicate by saying, "Aye," contrary, "No."

It gives me great pleasure to announce that Dr. Briggs has been unanimously elected Secretary of the Section. (Applause)

Is there any other business to come before the Society?

CHAIRMAN SMITH: If I may I should like to announce the committee that was authorized by the motion we passed a few minutes ago:

Dr. Lilly, of Fayetteville
Dr. Banner, of Greensboro
Dr. Gibson, of Raleigh
Dr. Peery, of Kinston
Dr. McCall, of Asheville.

Dr. McCall, will you serve on that committee and let us know when the report is ready?

CHAIRMAN-ELECT MCCALL: Yes.

As I understand it, this committee is to meet with the State Board of Health and work out what apparently is the idea that they want to get over in conjunction with the Government, or whatnot, and to notify each member that is classified as an eye, ear, nose and throat man in the State Medical Society, rather than the North Carolina Eye, Ear, Nose and Throat Society.

CHAIRMAN SMITH: Yes.

CHAIRMAN-ELECT MCCALL: That will be done.

If there is nothing further to come before the meeting a motion for adjournment is in order.

. . . Upon motion duly made, seconded, and carried, the meeting adjourned at six o'clock. . .

SECTION ON GYNECOLOGY AND OBSTETRICS

TUESDAY AFTERNOON, MAY 4, 1937

The Section on Gynecology and Obstetrics of the Medical Society of the State of North Carolina convened at two-ten o'clock in the Ball Room, Robert E. Lee Hotel, Winston-Salem, North Carolina, Dr. W. Z. Bradford presiding.

CHAIRMAN BRADFORD: The Section will please come to order.

The first paper on our program this afternoon is by Dr. George Johnson of Wilmington. The paper is entitled "Asphyxia of the Newborn."

Dr. Johnson!

. . . Dr. George Johnson presented his prepared paper. . . (Applause)

ASPHYXIA OF THE NEWBORN

By GEORGE JOHNSON, M.D., Wilmington

Mr. President, Gentlemen: This paper is based on the statistics of 500 consecutive deliveries at the James Walker Memorial Hospital from April 1, 1936, to January 30, 1937. For statistics to be of value their source should be known. These were on the basis of 10 questions filled out by the interns as soon as the patient was delivered. They were:

1. Serial No., initials, date—doctor.
2. Para.
3. Prenatal difficulties.
4. Type delivery.
5. Foetal heart beat.
6. Anaesthesia.
7. Weight.
8. Asphyxia—none—mild—marked.
9. How resuscitated.
10. Results—if dead, autopsy report.

364 were normal, 86 forceps, 22 breech, 14 Caesarean, 60 pre-eclampsia and 4 eclampsia. 24 babies died before discharge. 5 were macerated. 6 under four pounds. 8 foetal hearts not heard before delivery. 5 foetal hearts heard before delivery but now dead. 4 during delivery and one after delivery on account of cerebral hemorrhage.

In this 500 cases, 71 or 14.2% were asphyxiated. In 94 cases where no anaesthesia was used asphyxia was 3 mild, one marked, or 4.2%. Ether used in 62 cases, mild 6, marked 3, or 14.5%. Barbiturates used in 70

cases, mild 9, marked 2, or 15.7%. Barbiturates and ether in 146 cases, mild 12, marked 8, or 14%. Hyoscine plus 36 cases, mild 5, marked 3, or 22.2%. Morphia plus 20 cases, asphyxia mild, 5 marked, or 50%.

From the delivery standpoint—364 were normal with 27, or 7.4%, asphyxia. 86 forceps with asphyxia 21, or 24.4%. Breech 22 cases, asphyxia 11, or 50%.

The normal respiration of the baby depends upon the anatomic and physiologic integrity of the respiratory apparatus and respiratory center.

The potency of the larynx and bronchi are essential before there can be an exchange of gas between the aveolus air and blood, and the respiratory center will have to be capable of being stimulated before normal respirations can occur. Thus the functioning of both is necessary to the life of the baby.

Before going into the practical side of asphyxia it will be best to go into the anatomy and physiology of the respiratory apparatus. For this I am drawing freely on a paper written by Coryllos.[1]

In the fetus and the new born before the first breath is drawn, the lung is airless, the alveoli are collapsed, the parenchyma is fleshy in consistence, dark in color, does not crepitate and sinks in the water. This is termed atelectasis. The lungs fill the thorax completely so that there is no negative intrapleural pressure. With the first respiration the thoracic cavity expands and the diaphragm contracts so that a disproportion between the thoracic capacity and the initial volume of the being is created. Circulation in the atelectatic lung is limited to the bronchial vessels. When respiration begins the alveoli expands and with the expansion of the alveoli the perialveolus capillaries open up and begin to function. The lung does not open up all at once like a balloon, but as Arthur Keith expressed it, "like a lady's fan." The capacity of the lung during the first few days does not exceed 30 to 50 cc (Henderson), and it takes several days before expansion is complete. It is accomplished more during forced expiratory movements with closed or narrowed glottis, as when the baby cries, than during quiet respiration. Coryllos and Birnbaum showed that it required a pressure of 14 Mm. Hg. to inflate the atelectatic lung of a dog. Thus it can easily be seen how atelectatic areas can be left in the lung and these areas are more susceptible to infection.

In the vagi there are continuous streams of impulses going to the respiratory center and the respiratory movement is affected by these impulses. The vagi contains two kinds of afferent fibers. Stimulation of one kind stops inspiration and produces expiration, stimulation of the other stops expiration and produces inspiration. With a tube in the trachea inflation produces an instantaneous and complete relaxation of the diaphragm. Collapse of the lung on the contrary produces a tonic contraction of the diaphragm, this is known as the "Hering-Breuer reflex."

From the practical standpoint of asphyxia, I think every one will admit that if a woman can have a baby like the Lord intended her to, then the

incidence of asphyxia will be greatly diminished. In this series there is 14.2% asphyxias. If the old negro midwife at the cross roads was to get that percentage, she would be severely criticized. We are getting that percentage because the public is being educated that they can have a baby with less pain and they are demanding that they have less pain. If they have less pain, we are going to get more asphyxiated babies and have more operative interferences. There is one thing that we should all be very conscientious about and that is, not to make an indication for operative interference for our own pleasure and convenience. If a doctor is not willing to sacrifice his own pleasure and time, then he should leave obstetrics alone. I dare say more babies have been killed by the doctor being in a hurry to do something else or go somewhere else than by any other reason.

If we are going to try to practice analgesia in obstetrics, then we had best try to learn all we can about asphyxia and how to combat it. Personally, I believe in relieving all the pain of child birth that is practical; however, when I get a bad result, I sometimes wonder if I am right.

The three main causes of asphyxia are: sedatives, brain injury and obstruction. As for sedatives, the barbiturates with hyoscine or a small amount of ether, I believe will be the most satisfactory. Morphia should be given with caution. Brain injury, if severe, is where we get our deaths. Brain injury may be caused by (1) interference with the circulation of the foetus before birth. Careful watching of the foetal heart will usually tell us when the baby is getting into difficulty. A foetal heart rate below 100 or repeated changes of rate over a wide range with irregularities is indicative of foetal distress. (2) Prolonged pressure on the baby's head. (3) Sudden release of pressure. (4) Operative interference; about operative interference I think it can be safely said that more babies are killed by undue haste than by taking more time.

Asphyxia can be divided into two classes: Mild—where the baby occasionally gasps, moves when stimulated, resists movements and usually responds to any stimulation. These babies are easily resuscitated. Marked—in this class respiration occurs at long intervals and only following external stimulation. Muscles are relaxed very little or no reflex spasm of the glottis. These are the babies that are critical and should be intubated.

The essential points in treating asphyxia is to remove or lessen any resistance to respiration by clearing the air passages. Assure a good expansion of the lungs and administer CO_2. Also do not do anything that would increase an existing cerebral lesion.

The simplest thing to do first is with a suction catheter to get all the fluid out of the nose and larynx. This suction tube can be made very easily and is very inexpensive. If no other facilities are available mouth to mouth insufflation is advisable. Care should be used not to blow too hard and rupture the alveoli of the lung. The amount of air contained in the cheek puffed out is sufficient. What is better is to fill an anesthetist bag with 10% CO_2 and 90% oxygen, put a mask over the baby's face and

make pressure on the bag with the hand, gently forcing the mixture into the baby's lung. What is best, especially in the more advanced cases, is to introduce a catheter directly into the trachea with the help of a Flagg's laryngoscope or by guidance with your finger if you can do it, and then under measured pressure give the baby some CO_2 and O_2 directly into the lungs. If you are equipped, a Drinker respirator is a great help, especially in the prolonged cases. With a catheter in the trachea a measured amount of CO_2 and O_2 going to the lung. A regulated and regular amount of pressure on the baby's body and with the heat maintained by an incubator in the bottom. This is about the best you can do in the light of our present knowledge. I feel that I have saved several babies by this latter combination.

1. Coryllos, Pol. N., Americal Journal, Obstetrics and Gynecology.
2. Keith, Arthur, Further Advances in Physiology, edited by Prof. Leonard Hill, London, 1909.
3. Henderson, Y., Yournal A. M. A. 96—49—1931.
4. Coryllos and Birnbaum—Arch. Surgery—19—1929.
5. Flagg—American Journal, Obstetrics and Gynecology—4—31.

CHAIRMAN BRADFORD: Dr. Johnson's paper will be opened for discussion by Dr. R. B. Dunn of Greensboro.

Dr. Dunn!

DR. R. B. DUNN (Greensboro): I certainly enjoyed Dr. Johnson's paper a great deal and was interested in seeing the tabulation of the 500 cases and the relative proportion of asphyxia. There isn't very much on which I can disagree with Dr. Johnson on the cases that he presented.

There is one thing, though, that I would like to touch on. He mentioned the mechanics of pathology of the lung tissue when the first breath is taken. I presume you all know that about a year and a half ago, Dr. Rosenfeld and Dr. Snyder in Baltimore discovered that all these fetuses are breathers in utero before they are born. In other words, there is never any need to try to discover the cause of respiration, but merely the factors that change internal or intra-uterine breath in the extra-uterine breather.

That has made very definite progress. You can sometimes count these intra-uterine respirations. However, the mechanics of pathology, as Dr. Johnson stated, of the lung tissue, is just the same and I have nothing further to add in that respect.

I was fortunate enough to do a little research work also on the proper gases to use for resuscitating babies. We have all been taught that a mixture of about five per cent carbon dioxide and ninety-five per cent oxygen is the correct mixture, but I think you will all find that within the next year oxygen alone will be the gas of choice. It is quite definitely shown that CO^2, rather than being a stimulating factor, particularly in a newborn babe, is a depressing factor if the mixture is a little too great.

This is a little different than we have all been taught, and there is considerable work being done on it at the present time. However, if

oxygen is used, the babies seem to come around quicker, and it can be used over a long period of time, whereas the carbon dioxide definitely depresses.

As Dr. Johnson said, the first procedure is to get the nose and throat cleared of mucus and the passages open, and after that the next procedure depends, usually, upon the doctor and where he is. If he is in the home, the best procedure we know of is the old-fashioned mouth-to-mouth breathing, where you don't have any apparatus at all with which to administer oxygen. The next best thing is some method by which oxygen can be given and dilate the lungs.

Intubating the trachea, as Dr. Johnson said, is a very, very difficult thing, and I doubt whether there are very many of us here who have had much success doing that. There is, however, an apparatus put out by Heider and Company; it was first made by Dr. Krassman and Dr. Swope in Washington, and that is, the method of putting a face piece over the nose and mouth and administering air at a controlled pressure through a little tube that lies back of the tongue. It doesn't make any attempt to go down the throat at all. Many cases have been worked out with that system. It doesn't seem to dilate the stomach. All the air goes into the lungs. So that there doesn't seem to be any need for intra-tracheal intubation.

Also, as Dr. Johnson has mentioned, drugs are certainly the main factor nowadays in producing asphyxia, and I think we should all be very careful to try to use them to the best of our ability and provide the best means possible to overcome these asphyxiated babies, thus helping to prevent deaths, and in order to carry on further analgesia. (Applause)

Chairman Bradford: The discussion will be continued by Dr. Leslie Lee of Kinston.

If Dr. Lee is not in the audience, the paper is now open for general discussion. Is there any further discussion? If not, Dr. Johnson, do you have anything to add?

Dr. Johnson: Mr. President, I wish to thank Dr. Dunn for his discussion of my paper. That work of Dr. Snyder's is very interesting. He found out that when ether was given to these rabbits it had very little effect on the respiration, but if he gave any nitrous oxide—he had the rabbits opened and the uteri out in saline solution and he could see the babies breathe—the baby rabbits inside the uterus stopped breathing, which I thought was a very good point. He found that ether affected the baby rabbits inside the uterus very little.

So far as using a mouthpiece, an anesthetist's bag, that is a very good suggestion. It was in the paper but the time was too short to mention it.

Thank you.

Chairman Bradford: The next paper on our program is by Dr. E. C. Hamblen of Durham, and the title of his paper is "Endocrine Therapy."

Dr. Hamblen!

. . . Dr. Hamblen presented his prepared paper. . . (Applause)

SOME OBSERVATIONS ON ENDOCRINE THERAPY

E. C. Hamblen, M.D., Durham

Endocrine therapy has been essentially substitutional in effect. The therapeutic achievements with thyroid extract and with insulin are regarded as standards for comparison of the efficiency of the newer endocrine principles. A moment's reflection will assure us however, as to the temporary effect of each of these two principles when there exist serious functional aberrations of the thyroid or of the pancreas. The recognition of the rôle of the anterior pituitary in integrating and in perhaps truly stimulating the function of all the other glands of internal secretion has fostered the hope that endocrine therapy might become stimulative in character rather than substitutional in all instances. Such a therapeutic Utopia would permit the clinical management of all instances of hypofunctioning glands of internal secretion by the simple medium of physiologic shocks administered from some powerful-principle-containing-extract prepared from the anterior pituitary.

Since in gynecology, there was an eager and enthusiastic reception accorded the suggestion arising from translated animal data that the human ovary could be stimulated or physiologically aroused by such an extract from the anterior pituitary, it seems pertinent to consider from the evidence at hand whether our therapeutic hopes have been fulfilled. There should be no scarcity of material, for during the past 5 years the most extensive cooperative research program has been carried on by almost every woman with any irregularity of menstruation and by almost every physician who treats such patients. Before a consideration of these so-called "gonadotropic principles" of the pituitary, a few general observations will be made on endocrine therapy in gynecology, and the therapeutic efficiency of the estrogenic and progestational principles of the ovary will be considered.

Unfortunately, some of us have become so *endocrine conscious* that a patient presenting symptoms of irregular menstruation immediately qualifies as a candidate for the administration of glandular extract. We are encountered frequently by queries as to which of the commercial preparations is best in treating amenorrhea or menorrhagia. Thus it is obvious often that we have forgotten the medical and gynecologic associations of these symptoms, and that we rush headlong to treat these symptoms without exercising sufficiently our diagnostic acumen.

Equally unfortunate is our intense *pharmaceutical mindedness*. We overlook the other ways in which the functions of the glands of internal secretion may be influenced and altered beneficially. Some of these methods, while they may produce less prompt and less striking results, are more physiologic and yield more lasting effects. Radium and the roentgen ray may be employed to depress the activity of hyperfunctioning glands or to stimulate those functioning inadequately. The ability to obtain stimu-

lation by this treatment is not as yet generally accepted. Surgery may be used to ablate hyperfunctioning glands or those whose functions disconcert the harmonious activity of other glands. Diet alone or in combination with controlled thyroid therapy for its calorogenic effects may bring about better metabolism and increase thereby the individual's response to her own hormones. The correction of constitutional disease, undernutrition, anemia, or poor hygienic habits may result in a readjustment of endocrine function at a more efficient level.

Attention to local diseases in the glands themselves or in adjacent organs is followed often by improvement in endocrine function which has been altered by such disease. The ovary has its endocrine and exocrine function hampered by various local conditions which alter ovarian circulation and bring about edema and thickening of the ovarian tunica, thereby mechanically interfering with ovulation and predisposing to cyst formation. One of the most important of these conditions is pelvic congestion which may be due to sedentary habits, constipation, improper sex hygiene, pelvic infection, poor pelvic support, tumors and displacements of the uterus, displacements of the ovary, etc. Medical and gynecologic attention to these local factors often solves many "endocrine problems." Such treatment is far more rational than that of attempting to stimulate by gonadotropic principles these ovaries which are unable to respond normally to their own normally functioning pituitaries. What such ovaries need is rest, and not stimulation.

The theoretical methods of endocrinal therapy have gone yet further than attempting to stimulate or to substitute. The doctrine of *similia a similibus curantur* has been applied to build up anti-hormones against hormones produced in abnormal amounts.

Prior to the initiation of active sex endocrine therapy we should reflect upon the limitations of our knowledge of sex endocrine physiology and sex endocrine pathology and we should be aware of the shortcomings of the commercial preparations available to us at present.

Estrogenic principles: There are numerous such substances. These are supposed to be products of granulosa cells activity. These principles are available commercially under various trade names (theelin, amniotin, progynon, theelol, emmenin, etc.). Such principles, when employed, should be expected to give only temporary effects. There are two conditions in which such therapy seems well established. In gonorrheal vaginitis of children and in senile vaginitis it has been shown that moderate doses of estrin over a period of four to six weeks will produce active vaginal proliferation and cornification attended by clinical improvement. It is believed that, in the first instance certainly, the benefit results from the deposition of glycogen and the increase in vaginal acidity. In severe vasomotor symptoms of menopause which are attributed to hyperfunction of the gonadotropic elements of the anterior pituitary, exhibition of estrogenic principles in large doses for a week or two is followed by a decrease

in pituitary function and by an amelioration of the distressing symptoms. In both of these two generally accepted indications for estrin therapy the results are temporary and the effects produced soon disappear after treatment is stopped; however, the conditions treated are self-limited ones, and do not require continued substitution therapy. Active endometrial proliferation can be produced in hypo-ovarian conditions by such therapy in large doses, but such treatment, even when complemented with progestin therapy, is too expensive to be employed for the maintenance of cyclic endometrial activity.

Progestational principles: These principles are supposed to be produced by the activity of the lutein cells. Limited quantities of preparations of these have been available commercially under various trade names (proluton, progesterone, lipo-lutin). Such principles when employed yield temporary effects. The extreme expense of such has hampered their clinical employment. Success has been reported as attending the use of as little as one international unit of these principles three times a week during the course of pregnancy in the treatment of habitual abortion. The work of J. S. L. Browne would seem to indicate that such therapy might be rational if one were able to estimate the progestin deficit each day and substitute accordingly for this. Progestin alone in large doses in patients with anovulatory abnormalities of ovarian function will induce some degree of progestational reaction in the endometria of such patients, if the patients are not bleeding at the time of treatment. In the bleeding phase in such conditions large doses of estrin must be given prior to progestin therapy. Repeated series of such treatment will lead to some degree of tissue shedding which may approach the mechanical effect of a curettement. Little permanent benefit may be expected from such treatment, although the combined effects of large doses of estrin and progestin may result in a temporary and beneficial depression of pituitary functions and thereby permit rest and recovery of the ovaries. Curettage in such cases followed by combined substitutional therapy with estrin and progestin will allow the conservative handling of many young patients with excessive bleeding of such a nature. Such treatment must be repeated cyclicly and the expense makes it unpractical except in the rarest cases.

Gonadotropic principles: There are two general groups of such principles: those prepared from pregnancy urine and from the placenta, and those prepared direct from the anterior lobe. Such principles are distinctly different and show many pharmacologic variations in the experimental animal. Principles from the anterior pituitary have not been supplied commercially in sufficient strength to warrant any serious consideration. Those from pregnancy urine and from placenta have been employed most widely. The commercial preparations available are supplied as extracts containing many impurities and are of varying potencies (antuitrin-s, follutein, APL, etc.). We have observed some of these preparations to show a 4000 percent variation in potency despite the fact that they contained

approximately their stated number of rat units, it being the rat unit that varied.

Such principles are supposed to offer a means of physiologically stimulating ovaries in hypo-ovarian syndromes and in hypofunctioning states. Since, as we have observed previously, most of the instances of so-called functional amenorrhea, menometrorrhagia, and sterility have been attributed to such hypofunctional states, large amounts of these principles have been employed therapeutically.

During the past seven years we have attempted to evaluate the so-called specificity of these principles in the human. In some 75 patients during this period of time, we have had opportunities presented to make such critical observations. From these studies we have not been convinced that these principles will induce ovulation and corpus luteum formation where those conditions are not occurring spontaneously. Our criteria for these conclusions have been the failure to find progestational reaction after treatment where there had been an arrested interval stage or an endometrial hyperplasia prior to treatment, and the failure to observe recent corpora lutea at laporotomy in patients with anovulatory phases of the ovaries, who had received gonadotropic therapy before operation. Such conclusions seem warranted for the preparations available to us at present when they are administered by hypodermic 1 to 4 times a day in daily doses as high as 8000 rat units and in total doses as high as 15,000 to 20,000 rat units. If these principles are specific, one is safe in saying that an effective pharmacologic dose of them has not as yet been given.

SUMMARY

Without being a therapeutic nihilist, one must be impressed with the fact that the active principles of the ovary and the gonadotropic principles, so-called, of the pituitary do not offer us at the present time a practical solution of most of our problems predicated as being due to hypofunctioning states of the ovary. More potent and less expensive preparations, a more widespread knowledge of sex endocrine physiology and pathology, a more rational and painstaking diagnostic approach in these cases, and a more judicious selection of means of influencing endocrine function may lead to a more satisfying therapy.

Chairman Bradford: Dr. Hamblen's paper will be opened for discussion by Dr. Oren Moore of Charlotte.

Dr. Oren Moore (Charlotte): Mr. President and Gentlemen: I find myself in the position of the young woman who was being married. The scene was that of the cathedral dimness of a great church. She was proceeding down the aisle leaning on the stalwart arm of her father, with her maidenly eyes downcast, which is so characteristic of the female when she is going to be married. As she approached the altar she tripped and overturned a potted plant, spilling the dirt out on to that white covered floor.

She lifted those beautiful eyes, looked into the face of the old prelate and said, "That is a hell of a place to put a lily." (Laughter)

That is where I am today. I am one of the practical treaters of gynecological conditions, and if I may be permitted to say so, this paper is one of the most depressing things I have ever heard. I am well aware of the despondency and lack of optimism in the minds of the experimental men.

I was born and reared in that mechanical gynecological age. I was brought up to believe that everything in a female pelvis and every abnormality could be cured by operation. After trying that for a period of some fifteen or twenty years, when there was this other hope held out that we need not operate them for anything and could cure them all by endocrine, I very joyfully grasped that opportunity.

If I have been disappointed in my own experience—and I confess that I have—I hoped that sooner or later men of Hamblen's type would prove that I just hadn't done it right, that there was a cure, that there was a level to which we might attain by endocrine therapy that would offer that hope. And I still cling to that hope.

I confess, as I said in the beginning, that I have been bitterly disappointed by the failure to achieve the beautiful results that such men as Emile Novack so splendidly state. Novack speaks in most facile fashion, and when I have listened to him I have thought that all I had to do when he went away was to pick out these things, apply them to the woman and she would be well.

It just didn't work, and it still doesn't work. Yet, while I am on my feet, in confession of my failure I must say that I still believe in the principle of extracted pregnancy urine in the control of the habitual aborter. That belief is founded, I think, on practical fact. I cannot believe that my experience with the habitual aborter, in the administration of an anterior pituitary-like substance, or the extract from pregnancy urine, has been purely coincident, for when this substance was offered commercially, I had on hand—as any of you gentlemen who have treated obstetrical cases and gynecological cases for a number of years had on hand—a group of women who had tried over and over again to have a baby and had failed always at less than five, four or three months; the number of failures in my cases had run as high as nine. There were many of them at three, four, five and six.

So when this offered a possible solution of their problems, I sent out and gathered in all of the women I could find who were willing to come back and try it over again. They are always willing to try it over again, bless their souls. (Laughter) I know I am going to be blasted presently for saying this, but today I have sixty-three women who have successfully gone through with their pregnancies.

Am I talking for some firm's commercial preparation? Why, certainly I am, because if sixty-three women who had been unable to have babies before—had failed time after time—came through under the administration of this drug with the next pregnancy, I don't believe that is a coincidence. I can't explain it in any fashion. However, I do stand up and say

that I still believe in antuitrin-s in the case of an habitual aborter and shall continue to use it.

That doesn't say a word about "Ed" Hamblen's statement. He knows what he is talking about, from laboratory analysis. But something did happen to these women. It couldn't have been coincidence with sixty-three of them. It doesn't happen that way. So I still believe in that. I don't believe in many of the others, of course. I have had the same experience that he is having, and the same experience that other men are having.

I sincerely hope that while we are dabbling on the fringe of this very important problem, we will sooner or later find that certain of these things can be used in efficient fashion for the cure of these various feminine ills.

Thank you. (Applause)

Chairman Bradford: The discussion on Dr. Hamblen's paper will be continued by Dr. Kermit Brown of Asheville. Is Dr. Brown of Asheville in the audience?

Dr. Hamblen's paper is now open for general discussion.

Dr. R. A. White (Asheville): Gentlemen, I have listened to Dr. Hamblen's talk on endocrinology with great interest. I consider him an authority upon this subject, and understand he is writing a book on endocrinology. About two or three years ago he read a paper in Pinehurst on this same subject, and when he was through, I made the statement that the jury had come back with the verdict of not guilty, that we had no therapeutic value in the endocrine products as they are now given us.

Dr. Moore has brought out some points of practical value in the use of antuitrin "S." I have recently had opportunity to continue the treatment of Dr. Moore's patients in threatened abortions with apparent success and since that time have used antuitrin "S" in threatened abortions of my own cases with gratifying results.

From the accumulated evidence there would seem four conditions in which marked benefit is obtained by the use of these endocrine preparations:

First, antuitrin "S" in the abortioners; second, in some amenorrhea and menorrhagia; third, theelin in the treatment of senile vaginitis, and fourth, theelin in the treatment of gonorrheal vaginitis in young girls.

I am looking forward to the day when Dr. Hamblen's book is finished so that we may have some of the problems clarified. I have enjoyed his paper very much.

Chairman Bradford: Is there any further discussion of Dr. Hamblen's paper?

Do you wish to add anything, Dr. Hamblen?

Dr. Hamblen: I appreciate the discussion of this paper. I can certainly agree with Dr. Moore that some patients who had habitually aborted previously, have been observed to carry pregnancies to term after treatment with pregnancy-urine-gonadotropic principles (antuitrin-s).

I doubt the specificity of such treatment. If Dr. Moore has treated his patients as I have treated mine, he has used everything else plus antuitrin-s. I use thyroid extract, mixed treatment, progestin, pregnancy-urine-gonadotropic principles, put them to bed, tell them not to have intercourse —I "shoot the works."

I have done the same thing with progestin, too. I do not feel that I am justified in attributing any clinical results that I have obtained to any one particular therapeutic agent.

I hope I have not painted too gloomy a picture of the present status of endocrinal therapy. It was not my intention to do so. My chief therapeutic skepticism is concerned with the gonadotropic principles. I have yet to be convinced that these principles will allow stimulative therapy. I emphasized at the beginning of my paper that forms of endocrinal therapy which have been proven of definite value so far, have been substitutional in character. At present we have no definite clinical evidence that pituitary or pituitary-like principles offer a therapeutic means of stimulating the endocrine function of other glands of internal secretion. The estrogenic principles certainly give us some very good substantial results.

Most patients with excessive functional bleeding can be tided over by the use of estrin and progestin. The trouble here, at present, is the expense. It is difficult also to get these patients to keep up a long-time treatment. At the present time I estimate that the drugs for a substitutive therapy to tide over functional bleeders—using estrin and progestin—would cost somewhere from $60 to $75 a month, based on their present wholesale prices. Such therapy, therefore, is not practical. (Applause)

Chairman Bradford: Gentlemen, we are particularly fortunate this afternoon to have with us, as our guest speaker, a man whom many of us know, a man who stands for everything that is fine and progressive in medicine, particularly in the field of obstetrics and gynecology.

I take great pleasure in introducing to you this afternoon, upon, I think, his first visit to the land of the Long Leaf Pine—Dr. Edward A. Schumann, Professor of Obstetrics of the University of Pennsylvania.

Dr. Schumann! (Applause)

LEAVES FROM A GYNECOLOGIST'S NOTEBOOK

Edward A. Schumann, M.D., Professor of Obstetrics,
University of Pennsylvania, Philadelphia, Pa.

Dr. Edward A. Schumann: Mr. Chairman, Members of the Section: May I first express to you my appreciation of the privilege of being here to briefly address you? Let me also apologize, and explain in some measure the title of my paper. Not having any research problem, or indeed, any clinical problem which was new and inspiring and ready for presentation, it occurred to me that possibly a brief leafing through the scattered note-

books of thirty-five years of practice might present some changes in the trends which we have all undergone in obstetrics and gynecology and which might be of some interest to you.

Beginning with gynecology, one of the most noteworthy changes in trend which has come to my attention is the management of septic abortions. In the early years of this century it was common practice to immediately evacuate the necrotic products of gestation in these cases. Then the steadily increasing ratio of peritonitis, of pelvic cellulitis, of blood-stream infections and the like made us, as a profession, become rapidly more conservative. About five years ago, at a special meeting of the American Gynecological Society, called to consider the question of the treatment of infected abortions, it was the unanimous opinion with but one exception, that such abortions should be treated with the utmost conservatism, with true, masterful inactivity. Indeed, the group held that even vaginal examination should not be done in any case of incomplete abortion presenting an elevation of temperature.

That principle is one upon which most of us have worked for the past decade. Now, suddenly, a series of large case series have been presented from various clinics which seem to show that by judicious intervention, even during the acute stage of infection, even at the time when there is a high elevation of temperature, possibly with rigor, the hospital days of these patients are lessened, and that the incidence of subsequent disability is markedly decreased.

A very large series was presented by, I think, Dr. Brown of St. Louis last year for the American Gynecological Society. In my own clinics, we have been impressed by this work, and although I have been most conservative in the treatment of abortions, I am rapidly coming to the view that we can save these patients days of illness and spare a considerable number of them from the subsequent peritonitis and pelvic cellulitis by promptly removing the necrotic elements.

Next the problem of prolapse of the uterus: the older men here will recall that no one dared attempt to cure a case of procidentia without an abdominal section to supplement the plastic procedure.

The Kocher operation, extensive round ligament shortenings, even supravaginal hysterectomy—all of these were considered matters of necessity in the treatment of prolapse.

During the past 20 years the technic of supporting a fallen uterus from below has been so perfected that abdominal section only becomes necessary in cases of adnexal disease. The Watkins interposition and now the Fothergill or Manchester operation, especially the latter, so fully meet the indications, that nothing more is necessary.

I am about to present, as soon as our series is worked up, a considerable group of cases of prolapse treated by this extra simple procedure which takes no unusual skill, and can be done in a very short space of time, and,

as I shall presently discuss under anesthesia, almost always under simple narcosis anesthesia. The end-results have been rather unusually successful.

This brings me to the subject of anesthesia in gynecology. Ether, the commonly used anesthetic, is so safe and it may be given by such comparatively untrained persons, that it has become, at least in the North, the inevitable anesthetic of ordinary, daily use. However, for years I have been impressed, with many others, with the fact that inasmuch as gynecological procedures unless they are associated with acute inflammatory change, are not ordinarily particularly traumatic, and patients do not ordinarily suffer any marked post-operative inconvenience. In making ward rounds I have found that the patients do not suffer so much from the operation as from the after-effects of the anesthesia—distention, vomiting, distress, the unhappy ether taste, plus the fact of the unpleasantness of the inspiration of ether as an anesthetic.

These facts made me seek for another anesthetic or for a series of other anesthetics. I speak now only of gynecology and not of general surgery.

The use of profound ether narcosis was rather like cracking nuts with sledge hammers. We were having too much anesthetic for what was being done. So in casting about, and trying all the other anesthetics, we have come, in the clinics in which I work, to limit ourselves to four, generally speaking. I may say that within the last five years, in all the hospitals in which I worked, ether is being used ever more rarely.

We divide our cases rather sharply into the type of operation to be performed. I now have records of 1100 cases done under avertin anesthesia, as a complete anesthetic. We have had, in those 1100 cases, no death which was even remotely attributable to the anesthetic—although we have had deaths. Sixty-five per cent of the cases required no supplemental anesthesia at all. The other thirty-five per cent required nitrous oxide, or cyclopropane, for an average period of seven minutes. That period is the time when the peritonen is being incised and the intestines packed off, if this be necessary.

After the intestines are packed off, the inhalation anesthesia is discontinued and the operation proceeds under avertin alone. Eight per cent of the total required the addition of nitrous oxide or cyclopropane during the performance of the entire operation.

I might add one other thing, and that is that the use of the emesis basin in the wards is practically over. The only place where it is found being cases of acute inflammatory reaction in the perineum. In such cases there is vomiting, but other than that, no. The avertin patients wake up, ask for a drink of water, wonder what time it is, and then presently complain of a pain in their abdomen. Distention, and our old enemy the gas pain, has been tremendously reduced.

So much for abdominal section.

I do beg of those of you who do gynecology to try the plan of narcosis

anesthesia. I claim no originality for this but find it not often practiced. In plastic surgery, in women over fifty, we have one hundred eighteen carefully recorded cases in which extensive vaginal surgery, including vaginal hysterectomy, has been successfully performed with the patient quietly asleep after the simple administration of a quarter of a grain of morphine and a fiftieth of a grain of scapolamin hyarabromide, and nothing else. This was started for use with local anesthesia, but we found that gradually we began to abandon the use of the local infiltration of novocaine, until now, in patients over fifty, rarely if ever is infiltration necessary.

If the patient is large and massive, and there is no marked, dual lesion, a third of a grain of morphine may be given. There are just a few secrets about this. This is trivial, I know, but it is important, and that is, that one cannot give such an anesthesia in the bed in the ward, then lift the patient out of the bed, put her on a litter, wheel her through the institution to the operating room floor, and put her on the table.

Our practice is to take the patient from the ward to the anesthesia room, place her on the operating table and then administer the hypodermic, and leave her in the dark room thirty-five or forty minutes prior to the operation. And I assure you you can do any plastic operation on older women by this plan, but young women will not stand it, although I do not know why.

Then comes the question of the brief operations, the curettages, the evacuation or abortion cases, the extremely brief sections and exploratories, with possibly no added procedure whatsoever. Here we have been very well pleased by a comparatively small experience covering only two hundred cases, with svipal introduced intravenously. In one of the issues of the Journal of the American Medical Association recently there was a careful account of this drug with a considerable list of deaths attributed to it. Then there was a discussion on the part of the Council to the effect that the drug was not standardized, its dosage not correctly calculated, and that it was dangerous.

I think this may be true. I have no comment to make about it except to say that in our own experience—in which the drug has not been followed in the research laboratory but simply in the clinical amphitheatre—we have as yet had no disturbance.

And lastly, of course you know the beauties of local anesthesia alone. To this I am committed with the utmost force, and wherever possible, in my own clinics, we use local anesthesia. A little patience, and a little instruction of assistants, as I was instructed by Dr. Martin, to sponge "not heavily, but lightly, as a kiss of a summer breeze, and then away," said Dr. Martin.

If this type of operating is practiced, one can do almost anything under local anesthesia. I am about to report in the fall on 250 Caesareans under local anesthesia, without resort to inhalation anesthesia of any type.

I had some words to say about the endocrines but the subject has been so beautifully covered that I will mention but two points, one of them a very important matter. So many men in Philadelphia have become endocrine-minded, and have come to consider bleeding at the climacteric as a matter of functional bleeding and to treat it with endocrines. We have had within one year five cases of unrecognized fundal carcinoma. All of the women were under the care of competent physicians, but had been treated, foremost, by endocrine therapy without thought that the bleeding might be due to fundal carcinoma. They gave no thought to curettage which might have made the diagnosis possible in the incipiency of the disease.

The next point is a quotation from Dr. Victor Bouney of London, who is entirely outraged by the whole subject of endocrine therapy, and who in his crudest accent said before a meeting in New York: "Think of it. A young girl is spared the disgusting phenomena of menstruation by the kindly efforts of nature. Whereupon, her physician punctures her with a syringe filled with animal substance to secure a few drops of blood at irregular intervals." (Laughter) He was highly outraged.

Now we turn for a moment to obstetrics. First I wish to pay my respects to a development in the profession which moves me profoundly, namely, the correct but mistaken attacks upon the honorable operation of Caesarean section. All over the country statistics are being collected which present a rather woeful picture. You know that a ten per cent mortality for Caesarean section is rather average. However, not one set of those statistics attempts to divide Caesarean section into the conditions for which it is done and the time at which it is done, which I think are imporant.

Let us see. Suppose there comes to any one of us a young primipara to engage us for obstetrical care. Upon examination it is obvious that the pelvis is so contracted or distorted as to presumably not permit the passage of a full-time child without mutilation or death, and the physician quite rightly suggests to such a primipara Caesarean section in order to spare the baby.

She says, "What are my chances of life?"

You gather the available statistics on Caesarean section and you say, "Your chances of life are one in ten."

And, being a wise woman, she elects to lose her baby rather than run the risk of one in ten.

We know that that is all nonsense. Elective Caesarean section is done before the onset of labor, it is done before the membranes are ruptured, before there is any contamination, and it probably carries with it no more mortality than a simple appendectomy, no more mortality than any abdominal intervention. So that that girl's chance of dying is considerably less than one in a hundred.

Now, on the other hand, suppose a patient comes under your care who

has been in labor forty hours, the membranes have ruptured, there has been an attempted forceps delivery; she has a temperature of 101.2, is exhausted and dehydrated. A Caesarean section kills her as a result of peritonitis, and the two cases are grouped together.

I want to say another word about Caesarean section, and that is, in the statistics as recorded, every woman who has a Caesarean section and dies, goes down in the books as a Caesarean section death.

Let us look into that. Suppose you have admitted to your service two women with placenta previas, both of them exsanguinated and both of them moribund. In one of them you elect a bag induction or a Braxton-Hicks version, or a simple rupture of the membranes and any vaginal method of delivery, and she dies. She dies and is recorded in the statistics not as a death from version, not because of the introduction of the dilating bag, but as a death because of placenta previa.

You perform a Caesarean section on the other woman admitted at the same time and in the same condition. She dies. She isn't recorded as a death because of placenta previa but because of Caesarean section. It is not fair to the operation.

In my own city, where Caesarean section for eclampsia is regarded rather unfavorably, the death rate is very high. Why? Because women in the later phases of the toxemia of late pregnancy are admitted to the hospital, treated for twelve, twenty-four, thirty-six hours, conservatively, until they begin to get edema of the lungs, or are in coma, and then in despair and panic a Caesarean section is done upon a moribund woman and she dies. Naturally the report is, "Death from Caesarean Section." It was not that at all. It was death from eclampsia.

So that I insist that before we unqualifiedly condemn this operation, we must group the cases both as to the indication for which it was done, and the time of labor in which it was done, and then I feel sure we will see a different picture. The picture that you see now is a very black one, and that is, the ill-advised Caesarean section done at the wrong time by people incompetent of performing the operation.

One more word and I am through. This is another change in trend—the obstetric analgesia. I think this matter reached its apex some two or three years ago when it was the demand of women, urged on by their special journals, that no woman should have any recollection of her labor whatsoever. That complete amnesia was a sine qua non of good obstetrics. As a result of this we were all driven not only by our natural human impulses, but by the demands of our patients for this complete amnesia, to huge doses of scopolamine-morphine, narcophine, morphine and all the rest of the story.

That has been happening to most of us. I fancy it has been happening to you as well as to us. We have slowly come to the realization that we are doing several things: We are inhibiting the mechanism of labor. The

woman is so completely under the influence of the analgesia that she cannot bear down properly. The head does not descend to the pelvic floor because of the analgesia. Furthermore, if we are addicted to the use of barbiturates alone, we find so many cases of restraint necessary, to the point that when the patient finally comes to a forceps delivery and a complete anesthesia which is necessary for this purpose, we find our patient rather exhausted with an increased pulse rate and not the best risk in the world for such delivery.

So I feel that the propaganda of the profession should be directed against this excess analgesia, that a woman should be informed that no matter how humane her doctor is, no matter how much he wishes to spare her suffering, in the best interests of herself and her unborn child, she must bear a certain amount of pain, particularly in the first stage, and in the beginning of the second. We can minimize it. But I feel so strongly that we have come to a turning in the road in the matter of anesthesia and analgesia that I predict a very strong movement on the part of well-informed people in the next few years to minimize rather than exaggerate the necessity for this procedure.

In Philadelphia, up to a year or two ago, a woman came to an obstetrician not to confer with him about his experience or his training in obstetrics, but as to how far he would go in the matter of analgesia. She would say, "Dr. X gives his patients six pink capsules and they go out like a light. If you won't do it I won't engage you."

We shouldn't be directed by our patients in these matters. We should direct them in their best interests. Please don't misunderstand me. No one is more distressed at seeing a suffering woman than I am. That isn't the point at all, but we are carrying the matter to an absurd degree.

Thank you very much. (Applause)

CHAIRMAN BRADFORD: I have an announcement.

. . . Announcement in regard to testimonial dinner. . .

CHAIRMAN BRADFORD: We will have to proceed rather rapidly. The speakers will limit their papers to fifteen minutes. That rule will not be applied to any guest speakers, or any invited guests. The general discussion will be limited to four minutes.

The next paper on our program is by Dr. Paul W. Johnson of Winston-Salem, entitled, "Are We Progressing in the Treatment of the First Stage of Labor?"

Dr. Johnson!

. . . Dr. Johnson presented his prepared paper. . . (Applause)

ARE WE PROGRESSING IN THE TREATMENT OF THE FIRST STAGE OF LABOR?

Dr. Paul W. Johnson, Winston-Salem

In discussing this subject, "Are We Progressing in the Treatment of the First Stage of Labor?" I have reviewed 6,482 cases, their conduct, methods, maneuvers, drugs used, and end results. I state this title in the form of a question, because I firmly believe we have yet some very important ones to answer. I shall endeavor to consider it from a practical view, backed by scientific reports and in doing so, in order to see the final results, I shall be compelled to a slight degree to go into the post-partum, but only as a comparison.

Beginning with the onset of labor or first stage of labor physiologically, I will not discuss, but it is the period which evolves effacement and dilatation of the cervix, and so prepares the birth canal for the expulsion of the fetus, which averages about sixteen hours in the primipara and ten hours in the multipara. This of course is the most trying part of the confinement from the standpoint of the patient, attendants, and some times the obstetrician. As the contractions become increasingly severe, sometimes frequent and prolonged, both the patient and the family become nervously concerned and "Can't you give her something doctor" scene arrives, thus modern obstetrical practice requires that she be aided in so far as possible without jeopardizing the safety of the mother or child. At this time of course the treatment should be outlined for the particular patient, after B. P. reading and urinalysis has been recorded deciding then upon the type of analgesia, which will be discussed later, the diet, intake of fluids and general care. The obstetrician of course ought to be familiar with the type of pelvis and the position of the fetus. Nourishment during this part of labor must be adjusted to the individual, but in no case should she be permitted to take solid or heavy food, due to the nausea and vomiting, but on the other hand it is important to alkalinize her and encourage the patient to take fluids freely. This will counteract dehydration if labor becomes prolonged, and the addition of carbohydrates in any form will tend to prevent acidosis, thus I believe it wise to give any patient who has had a long labor at least 500 cc. 10% glucose i.v. either during labor or immediately after.

The question of pelvic examination may present itself at most any point during the first stage, but in private practice where the pelvic conditions are known in advance, I see no reason why the obstetrician cannot content himself with abdominal and rectal examination if he has had previous training. There may, however, arise some indication for pelvic examination, and if so the technic of vaginal examination should be identical with the technic used at the time of the delivery. The initial pelvic examination is a very important factor in consideration of infection. As to the technic and antiseptics, they vary according to the routine of the different institutions. The introduction of the rectal method was by E. Ries, many years ago and ranks as one of the major important advances in the art of

obstetrics and certainly it has, and should in years to come be a valuable maneuver in decreasing maternal mortality and morbidity. By this means the properly trained obstetrician can in most cases determine the dilatation of the cervix, the nature and level of the presenting part. I do not mean to infer that it is never necessary to do a vaginal examination, but R. A. Reis has shown that the percentage of obstetrical afebrile case is definitely when neither rectal nor vaginal examination is made, therefore we should use every precaution possible. We are also aware of the fact that during the practice of pelvic examinations, some obstetricians are prone to use the so-called method of "manually dilating the cervix," but my conception of this method correctly stating it would be to substitute a word for dilating, and say "manually tearing the cervix." This is actually in the true sense the true procedure involved. In connection with manual dilatation, I should like to mention the use of pituitary extracts in the first stage of labor merely to condemn it. It is significant for its obsolescency, except it may be used in 1-minim doses as part of the procedure for the induction of labor, and 1 to 3 minims doses may be given to overcome uterine inertia at the end of the second stage of labor when the fetus head is at the perneum, and progress has ceased. However, the former use is not commendable. The major use is to control post-partum hemorrhage. The cervical musculature is not unlike that of a rubber band in reference to the elasticity. One can imagine grasping either end of the rubber band and abruptly stretching it, how quickly it would snap, but by putting gentle and gradual traction on it, how greater the length would be before tearing. The same theory may be applied to the cervix by the use of manual dilatation and pituitary extracts. I lay even more emphasis on this particular question by saying; that I do not believe there has ever been a baby born when the cervix was not torn to a lesser or greater degree. I substantiate this statement by having examined a series of six hundred cervices of spontaneous deliveries, where neither instruments, pituitary extracts, nor even quinine had been used, and not one was free from damage. I grant you that in a vast number the healing was so perfect that it can not be detected by examination at the three months inspection. For the protection of the cervix, fetus, and post-partum infection the practice of bag induction and rupturing of the membranes during the first stage of labor, or for frank induction of labor should be used with utmost precaution. The obstetrician is inviting a hazardous condition when he does it without substantial indications. Do not misunderstand me by the above statement, because there are a number of cases that this procedure is a wise step both for the sake of the mother and fetus. I merely mention it as an additional precaution, for, every time the obstetrician performs a manipulation in the vaginal or cervical canal, another chance of damage and infection has been welcomed. It is also reported by the Cornell Obstetrical Department that premature rupture of the membranes definitely increases the blood loss by 50%; that with no excessive blood loss the incident of infection is not increased, but this percentage is amazing

and should attract the attention of every obstetrician. But knowing the above is true is not of major importance that we exert all efforts in obliterating that question, which would be a march of progress in decreasing pelvic operations, uterine tetany, fetal asphyxia, even fetal death, and cancer of the cervix.

To further substantiate my above remarks I give you the report of the New York and British Committees. Their results gives us considerable body of reliable evidence to show that in at least 90% of all deliveries is capable of being effected by normal uterine force and effort. This figure is probably too low as in some clinics the report is as follows: England interference rate is only 5%; in Denmark only 4.5%; in Sweden 3.2%, and in Holland where the obstetric service is of a very high standard, the rate figures lower than 1%. Now in a marked contrast with these conservative figures, here in America, 20% of the deliveries were operative of some degree or manner; and that the total death rate was 10.5 per 1000, either from sepsis, post-partum hemorrhage, or hemorrhage into the broad ligament due to injury which may occur soon after delivery, or at the time of sloughing several days post-partum. The sepsis death rate 4 per 1000 in operative cases, as compared with 2 per 1000 in non-operative or spontaneous deliveries, and a sepsis rate of only 0.8%. I mention the above figures in connection with the first stage of labor because a very high percentage of "meddlesome obstetrics" is done during this stage. The facts that I have enumerated bear witness to the tragic part which unwise and careless interference with the normal course of labor plays in obstetrics. We cannot avoid accepting these statements as true, when convincing evidence is obtained from the low maternal and fetal death rates are found, in these practices and medical centers in which is so well organized as to allow that proportion of deliveries, which is approximately 95%, to be protected against "hurried and spectacular obstetrics."

The question of analgesia and anesthesia has been discussed in connection with the first stage of labor somewhat at large in a general consideration. Various drugs have been used alone and in combinations as follows: Gwathmey's technic, morphine or pantapon with scopolamine, avertin, pernoctin, paraldehyde, dilaudid, sodium amytal, sodium evipan, seconal and pentobarbital sodium. However, there are marked variations with the various forms of analgesia. It is significant, I think, that in a report by Dr. Pastore, of New York, that the highest incident of hemorrhage and average blood loss was obtained in that group of patients who had received morphine and rectal ether, but if scopolamine was given prior, the hemorrhage was reduced. This discrepancy, it was stated, was probably due to measuring of the blood. It is also of interest to note that where ether was used excessively that hemorrhage was markedly increased, thus the infection percentage was elevated. I should like at this time to report a series of 278 cases which were given pentobarbital sodium. Of these 256 were followed by ether oil. My dosage varied from 4½ grains to 18 grains. Only three of these cases were given morphia, and they con-

sisted of pantapon only 1/3 grains each dose. 15% were given scopolamine, dosage 1/200 grain and the remaining 85% had pentobarbital sodium with rectal ether oil. The amount of ether oil varied from what is known as ½ dose to 2 full doses. 82% of the cases I classified as excellent results, 14% as partial, and 6% as very poor. In only three cases I observed excessive blood loss and they did not exceed 500 cc., and incidentally they were not given scopolamine. Approximately 12% of the above number became excited, but did not remember it, when questioned after the delivery. In this number there were no maternal deaths, but four mature fetal deaths were recorded; of these, two were still birth, one expired two hours after delivery, and one eight hours after, the mother of the latter before delivery being a pre-eclamptic. A shallow type of breathing was noticed in approximately 10%, but one ampule of coramine immediately corrected that symptom.

The duration of labor was not unlike that of other methods. One particular emphasis I should like to make is that those patients under the influence of pentobarbital sodium, and totally unconscious, would at the request of the attendant, take freely of fluids during the entire first stage of labor, until nitrous oxide or ether was started for the second stage of labor. I do not think, however, that this drug ought to be given in the home unless a graduate nurse is present all the time, and when the patient is in the hospital the room should be darkened and a nurse at her bedside the entire course of labor. It is very important to keep the patient free from external stimuli to accomplish the best results. A check-up on the white count revealed that it was not lowered following the use of pentobarbital sodium. In using barbiturates, however, we ought to avoid those with benzene radical. I have recently started a series of cases using seconal, but the number is too few to draw any valuable conclusions. I do not believe that we have found by any means a perfect drug, but I do believe that pentobarbital sodium is the most favorable of the entire group, both for the welfare of the mother and child.

I think we all agree that it is a well recognized fact that mortality statistics, although positive in themselves easily obtained, present a very incomplete picture. But I do think it is self-evident that our aim should be to use methods which will not only reduce the percentage of mortality in mothers and babies, but will also reduce accidents, complications, and birth injuries which may either immediately be dangerous or productive of physical handicap in after life, and blot out some of the "monuments of mistakes and radicalism" from the anxious faces of obstetricians, and I hope new courage will come to those multitudes who are facing the most paralyzing of all questions, "What difference does it make?" Common sense, scientific reasoning in an uncommon degree is what the world calls wisdom.

CONCLUSIONS

1. I think we still have some very important questions to answer in "The Treatment of the First Stage of Labor."

2. The only condition under which to do pelvic examination is when in doubt, and under identical delivery technic.

3. That rectal examinations should be made routinely when possible.

4. That the use of pituitary extracts in the first stage of labor, and manual dilatation of the cervix be prohibited.

5. That bag induction and premature rupturing of the membranes must have specific indications.

6. Select your cases for various types of analgesia and anesthesia.

7. Emphasis on the Treatment of the First Stage of Labor is an important factor in our post-partum results, not only for thirty days, but for thirty years, and above all be true to your patients and to yourself.

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Curtis, Chicago, Ill.
New York Academy of Medicine, New York City.
De Lee and Greenhill, Chicago, Ill.

Chairman Bradford: Dr. Johnson's paper will be opened for discussion by Dr. Bayard Carter.

Dr. Bayard Carter (Durham): I think Dr. Johnson's remarks about the first stage of labor are very important. I feel that no first stage of labor should be conducted under any routine form of analgesia. I think you will have to individualize these patients. Certainly the best protection of the patient, as I see it, is that the man who is in charge of her care knows practically everything that can be known about the patient before the first stage of labor starts.

If it is essential that analgesia be used, you must be prepared to give all your time to the patient, to watch the effect of analgesia. I think Dr. Johnson's emphasis is on the fact that no patient under analgesia should be left alone.

Next, in the first stage of labor I can never convince myself that the number of pains the patient has should in any way dictate what we will eventually do in the matter of delivery. I think that idea should be discouraged and I think we should go back to the fundamental principle of allowing these patients to do what they can without interference of any type.

If you do have to use analgesia, I think small doses of morphine or scopolamine, added as necessary under very strict control of the patient, gives the best chance for small and needed periods of rest with the return to normal of the physical activity of the uterus.

Similarly, I feel that if we will from time to time take the trouble to review carefully and with a critical eye the mechanism of labor which we are trying to encourage in handling the patient, we will do much to cut down the interferiential procedures which are often necessary following the routine use of analgesia.

From studies of this sort I think we do get some idea of what well controlled analgesia can do. I think, too, no woman, as Dr. Schumann stated, has the right of suggesting the type of therapy we should use in her case.

The majority of women do not need it. No interferiential procedure should be used unless it be indicated. The routine use of Vorhees bags, rupture of the membranes, oxytocic principles—all of these have contributed and will continue to contribute to the mortality and morbidity figures. I think it is a neglected field, and I think it is a field in which we have simply got to turn back to fundamentals if we expect to encourage better obstetrical practice, not only for those already in the field, but for the students who expect to enter the field in the near future. Dr. Johnson has shown what can be done under careful supervision. (Applause)

Chairman Bradford: Dr. J. C. Burwell of Greensboro will continue the discussion of this paper.

Dr. J. C. Burwell (Greensboro): I think the strong note of conservatism that Dr. Johnson has struck in this paper certainly cannot be over-emphasized. Today we are tending more and more towards conservatism, particularly in the larger clinics, where it is possible to make a study of these cases.

I was particularly interested in what he had to say about pituitrin. Certainly many of us here have had cases in the country where we have been detained for a long time and where we wanted to hurry labor along. There are entirely too many dangers to let this influence our decision. There is one thing that I don't know whether any of you here have used, but it is being used more now in the larger clinics. This is nasal pituitrin. We use 1 cc. for an hour, preferably at fifteen minute intervals, on a pledget of cotton stuck in the nose.

It has the advantage over intramuscular pituitrin in that it can be stopped at any time. Then, as Dr. Johnson brought out, there is the matter of rectal examinations. I don't think we can be too careful in limiting the number of vaginal examinations that we have to do, because there certainly is a great chance there of introducing infection. In the technique of rectal examinations we must be very careful, because even a rectal does not necessarily specify that we cannot introduce some infection. The technique that is employed—at the places where I have been—is that a large per-

forated paper shield is placed over the examining finger, or else a piece of gauze is held over the vagina as the examining finger is introduced into the rectum. At the conclusion that piece of gauze is wiped down over the rectum and then thrown away.

In the matter of analgesia, I wonder if we have seen the end results of Gwathmey's technique? We know what good results we get at the time we use rectal ether, but I wonder in what condition we would find the rectal mucosa, when examined later. I have heard many proctologists say that it certainly does predispose to lesions of the rectal wall.

Again, please let me express my appreciation of the excellent paper. Thank you. (Applause)

CHAIRMAN BRADFORD: Dr. Johnson's paper is now open for general discussion.

DR. CHARLES L. NEWLAND (Brevard): The question of analgesia has come up in two papers this afternoon, and the people who have been talking have been those working in hospitals, with assistants and so on. A great many of you have to practice obstetrics alone in the country as I do, with the grandmother and husband sitting over in the corner. When that woman gets to hollering you have to give her something.

I may be old-fashioned, but I still believe in the use of chloroform for that type of obstetrical practice. You can give it in very small doses at the height of the pain. You can satisfy the family and in the end, you have given the patient very little analgesia.

Chloroform has not ben mentioned. I know it is rather taboo as an anesthetic. But it still has its place, I think, in the practice of obstetrics in the country and I would like very much to hear some comment on that. (Applause)

CHAIRMAN BRADFORD: Dr. Johnson's paper is still open for discussion. Do you have anything to say in closing, Dr. Johnson?

DR. JOHNSON: I appreciate the discussion of Dr. Carter and Dr. Burwell, and the facts brought out in reference to the results both with morphine and scopolamine, in connection with which, as I stated in the beginning, there is a wide variation as to the use, the end results, and the percentage that was compiled with each individual.

I appreciate, also, the remarks made with reference to the technique of making rectal examinations, and also the damage that is done to the rectal wall. I read a report on those cases that had been reviewed and, of course, saved from a mild inflammatory process of the rectal wall which in about six or seven of my own cases—which I didn't have time to explain, developed a diarrhea, but over the course of three days, it was easily controlled. On the check-up, which started eighteen months ago, we haven't seen any ill results from it.

With reference to using chloroform, we were restricting our discussion to the first stage of labor and not to the second stage when most probably you had to use your chloroform.

In my conclusion, I shall briefly mention that I think we still have some very important questions to answer in the treatment of the first stage of labor. The only condition under which to do pelvic examinations is when in doubt, and only under strict delivery technique, and as few as possible.

Rectal examinations should be made routinely when possible, and do only those that are absolutely necessary.

The use of pituitary extracts in the first stage of labor, and manual dilatation of the cervix should be prohibited.

Bag induction and premature rupturing of the membranes must have specific indications.

Select your cases for the various types of analgesia and anesthetic treatments.

And lastly, emphasis on the treatment of the first stage of labor is an important factor in our post-partum results, not only for thirty days, but for thirty years.

And, above all, be true to your patients and to yourself, because the health and happiness of any patient who comes to you not only is limited to thirty days, six weeks, three months, six months results, but it certainly is of vital importance to her that she be healthy and happy throughout her entire life. (Applause)

Chairman Bradford: At this time, the Chair wants to appoint a committee, which will withdraw and return at the close of the next paper, to nominate a chairman for the Section for the ensuing year: Dr. D. J. Johnson, Chairman; Dr. K. L. Dickinson and Dr. J. S. Brewer.

The next paper on the program is the report from the Department of Public Health on "A Five Year Summary of Maternal Mortality in North Carolina."

Dr. Hamilton!

. . . Dr. Hamilton presented the paper prepared by himself and Dr. R. T. Stimpson. . . (Applause)

MATERNAL MORTALITY IN NORTH CAROLINA

Five Year Study—Introduction to the Final Report

By J. H. Hamilton, M.D., and R. T. Stimpson, M.D.
From the Bureau of Vital Statistics of the North Carolina State Board of Health

In the Preliminary Report submitted in 1933 and again in the Second Report given in 1934 attention was directed to the death of women performing that most important function of bringing forth new life. The loss of more than 500 lives each year added to the tragedy of 500 shattered homes and numerous motherless children makes maternal mortality a

major problem in this or any state. The solution of a problem so complex requires the collection of pertinent information and its interpretation. In an effort to aid in the solution of the maternal mortality problem in North Carolina a study was begun in 1932 and continued through 1936.

To secure information the birth and death records of the Bureau of Vital Statistics served as the initial source. To supplement this a group of obstetricians, gynecologists and general practitioners assisted in the preparation of the comprehensive inquiry form. This was sent to every physician who signed a death certificate on which some condition relating to pregnancy was given as the cause of death. Since there were 2,746 maternal deaths during this five year period, 2,746 inquiry forms were sent with the request that they be filled out as completely as possible and returned to the Bureau of Vital Statistics of the State Board of Health. 1599 of these were received and 1587 contained acceptable information. This represents 58.2 percent of the total maternal deaths and testifies to the interest and helpful spirit of the medical profession in North Carolina. This is particularly gratifying since the forms call for such complete information as to demand a considerable amount of time from the busy practitioner supplying it. We believe that the returned forms represent a fair sample of deaths relating to pregnancy for the years 1932 to 1936. In substantiation of that belief 97 of the 100 counties in the State returned inquiry forms. The three counties not supplying information reported only three maternal deaths during the five years. Hypothetical division of the State into three sections reveals that the Eastern, Central and Western sections are each well represented. Tabel I.

All of the available facts relating to each death were coded on a punch card. The 1587 cards were then run through a tabulating machine so that all information is available in tabular form. These data are much too voluminous and comprehensive to be presented in a short time. We are, therefore, giving in this introduction only a few outstanding facts. It is hoped that much additional information will be available to those who request it.

Maternal statistics in the State by years and rates are as follows:

	No. Deaths	*No. Births*	*Rate*
1932	555	77,880	7.1
1933	535	75,322	7.1
1934	605	79,556	7.6
1935	554	79,596	7.0
*1936	497	76,869	6.5
	2,746	389,223	7.1

*Provisional

Table II serves a dual purpose. In the first three columns it gives pertinent information about all of the maternal deaths which occurred during four of the five years that were included in the study. The data for 1936 could not be included for the reason that the death certificates for

that year have not yet been tabulated. The fourth column is for the deaths that were included in the study and gives the percentage of the total maternal deaths that were listed under each classification of the International List. When it is compared with column three which gives the

Table I.—QUESTIONNAIRES RETURNED IN MATERNAL MORTALITY STUDY, 1932-1936 INCLUSIVE

Section of State	Maternal Deaths 1932-1936	Questionnaires Returned	Questionnaires Returned per 100 Maternal Deaths
East	1,169	640	54.7
Central	1,106	660	59.7
West	471	299	63.5
Entrie State	2,746	1,599	58.2

Table II.—MATERNAL DEATHS, 1932-1935, Inclusive

CAUSE OF DEATH	Number of Deaths	Rate per 1,000 Live Births	Per Cent of total Maternal Deaths	Per Cent according to returned questionnaires
140—Abortion with septic conditions	153	0.5	6.8	7.6
141—Abortion without mention of septic condition	120	0.4	5.3	5.2
142—Ectopic Gestation	45	0.1	2.0	1.7
143—Other accidents of pregnancy not including hemorrhage	93	0.3	4.1	3.4
144—Puerperal Hemorrhage	258	0.8	11.4	11.3
145—Puerperal Septicemia (Not specified as due to abortion)	370	1.2	16.3	14.6
146—Puerperal albuminuria and eclampsia	688	2.2	30.4	29.2
147—Other toxemias of pregnancy	152	0.5	6.7	6.8
148—Puerperal phlegmasia alba dolens	102	0.3	4.5	4.8
149—Other accidents of childbirth	273	0.9	12.1	15.1
150—Other and unspecified conditions of the puerperal state	9	0.03	0.4	0.3
Totals	2263	7.2	100.0	100.0

percentage in each classification of all maternal deaths for the years 1932 to 1935 inclusive no significant difference is shown. Therefore, this gives additional evidence that the cases included in the study are a fair sample of the maternal mortality problem in North Carolina. Again as was shown in the Preliminary Report for the years 1927 to 1931 and in the Second Report of this study Puerperal Albuminuria and Eclampsia is the outstanding cause of death and out-numbers almost two to one the deaths caused by Puerperal Septicemia, the second most important cause. Since in most northern states more deaths are caused by septicemia than by toxemias, we have a definite clue to the cause of our high maternal mortality rate. Until we know why we have more toxemias of pregnancy than

do our northern neighbors, we must in order to reduce its toll depend primarily on prenatal care. Physicians with large obstetrical practices have reduced the deaths from toxemias almost to nil for those of their patients receiving adequate prenatal care. If the prospective mothers of this State could be made to realize this fact many lives would be saved. With 36 percent of our maternal deaths chargeable to toxemias we have rather definite suggestions for one plank in our platform for the protection of maternity.

Puerperal Sepsis does not always indicate a slip in the technique of the patient's attendant. The examination of cultures from the oral and generative tracts of patients frequently show the flora to be identical. Therefore, it is not presumptuous to assume that many women infect themselves. Aseptic technique should be practiced both by the attendant and the patient.

In Table III is shown the cause of death by ages for those included in the study. Since approximately two-thirds of the births are by women under thirty years of age, it will be noted that the deaths from abortion with septic conditions, abortion without mention of septic conditions and puerperal albuminuria and eclampsia, are relatively more prevalent among

Table III.—MATERNAL DEATHS BY CAUSE, BY AGE

CAUSE Numbers refer to International List	Age								Totals
	Under 15	15 19	20 24	25 29	30 34	35 39	40 44	45& over	
140—Abortion with septic conditions		10	37	20	30	15	3	5	120
141—Abortion without mention of septic conditions		9	15	22	18	12	5	1	82
142—Ectopic Gestation		1	4	6	8	4	3	1	27
143—Other accidents of Pregnancy not including hemorrhage		10	7	9	8	6	14		54
144—Puerperal Hemorrhage (a) Placenta praevia		9	12	18	25	30	14		108
144—Pperperal Hemorrhage (b) Other puerperal hemorrhage		4	14	11	15	15	12	1	72
145—Puerperal Septicemia (Not specified as due to abortion)	2	42	67	52	26	25	14	4	232
146—Puerperal albuminuria and eclampsia	7	97	84	88	73	66	45	3	463
147—Other toxemias of pregnancy		21	23	18	19	14	13		108
148—Puerperal phlegmasia alba dolens		5	17	20	12	18	4	1	77
149—Other accidents of childbirth (a) Caesarean Operation	3	19	23	22	17	10	8	1	103
149—Other accidents of childbirth (b) Others under this title		19	23	23	30	24	17	1	137
150—Other and unspecified conditions of the puerperal state				1	2		1		4
Totals	12	246	326	310	283	239	153	18	1,587

those in the latter years of their child-bearing period. Ectopic gestation, other accidents of pregnancy, placenta praevia, other puerperal hemorrhages, toxemias of pregnancy, puerperal phlegmasia alba dolen and other accidents of child-birth are much more prevalent in women during the latter half of their child-bearing period. Only puerperal septicemia is more prevalent in the younger group. Caesarean operations are very evenly distributed by age. Apparently child-bearing is more hazardous to older women than to younger women. Those under thirty contributed approximately 67 percent of the births and 56 percent of the deaths while the older group contributed 33 percent of the births and 44 percent of the deaths.

The number of the pregnancy in which disaster occurred is as follows:

Pregnacy	*Deaths*	*Rate*	*Pregnancy*	*Deaths*	*Rate*
1st	521	32.8%	7th	53	3.3%
2nd	194	12.2%	8th	48	3.0%
3rd	111	7.0%	9th	42	2.6%
4th	82	5.2%	10th and Over	107	6.7%
5th	81	5.1%	Unknown	258	16.3%
6th	90	5.7%	TOTAL	1,587	100.0%

In Table IV we have a classification of the deaths according to whether or not the women were delivered and the place of death by race and by age groups. It appears that the younger women of both races are more

Table IV

MATERNAL DEATHS BY OCCURRENCE IN HOSPITAL OR HOME BY AGE AND COLOR

			Age								Totals
			Under 15	15 19	20 24	25 29	30 34	35 39	40 44	45& over	
Delivered	Death in Hospital	W	1	47	109	76	78	62	40	2	415
		C	4	51	40	45	20	19	8	2	189
	Death in Home	W		56	75	93	92	80	56	10	462
		C	4	69	76	55	53	54	20	4	335
Not Delivered	Death in Hospital	W	1	7	9	13	11	4	11	1	57
		C		3	5	4	9	5	1		27
	Death in Home	W		3	6	13	11	6	9		48
		C	2	9	6	10	9	10	8		54
Death in Hospital	Totals		6	108	163	138	118	90	60	5	688
Death in Home	Totals		6	137	163	171	165	150	93	14	899
Totals			12	245	326	309	283	240	153	19	1,587

inclined to use hospital facilities than are the older women. It would seem that better schooling is more effective than age for the acquisition of wisdom. We would expect that the older group would be better equipped financially to provide for hospital care. If they were, they apparently did not choose to spend their money for that purpose. 982 or 62 percent of the deaths were white women and 605 or 38 percent were negro women.

In all subsequent tables the total numbers may be different from the total number of inquiries received by reason of the fact that on the inquiry forms not all questions were answered. Tabulations are made only on the basis of acceptable and applicable information.

In Table V is given the month of pregnancy in which the patient was first seen by a physician and the classification as to whether or not the patient was ill when she came to the doctor. It will be noted that 82.4 percent of the total had some complication of pregnancy or concurrent disease when they first saw their physician and that only 17.6 percent reported for examination when they were presumably well. If we assume that adequate prenatal care must begin before the end of the fourth month of pregnancy, only 74 of the 1396 having this question answered gave their physician a fair chance to give them protection. This constitutes only 5.2 percent of the total. In the second report approximately 9 percent of the small number included in that study reported to their physician before the end of the fourth month. It is evident that we have not yet made progress in our efforts to provide adequate prenatal care to those of our citizens who are creating new life.

The Duration of Labor by Age is given in Table VI. If there is any significant relation disclosed by these data, it is not readily apparent. Perhaps a more complete analysis and the computation of specific rates may disclose that this assumption is erroneous.

Table VII indicates Deviation in Temperature During Labor. If it is an indication of sepsis it would seem that most of our infections develop after labor. To a clinician it may be significant that so high a percentage of temperatures over 100 occur before delivery.

Table V

HEALTH OF PATIENT AT TIME FIRST SEEN BY PHYSICIAN
and
MONTH OF PREGNACY

	Month of Pregnancy when First Seen									Totals	Per Cent
	1	2	3	4	5	6	7	8	9		
Ill at Time	21	33	70	66	55	50	62	83	711	1,151	82.4
Not Ill	19	7	25	23	20	16	22	23	90	245	17.6
Totals	40	40	95	89	75	66	84	106	801	1,396	

Table VIII shows the Maximum Blood Pressure by Age and Color. It would be hazardous for anyone but clinicians to attempt to evaluate this information. It would seem, however, that the generally recognized importance of blood pressure determination in pregnant women has statistical confirmation.

Table VI.—DURATION OF LABOR

Time	Age								Totals
	Under 15	15 19	20 24	25 29	30 34	35 39	40 44	45& over	
Under 2 Hours	2	8	6	23	18	21	9	1	88
2-5 Hours		13	21	25	26	24	7	1	117
6-11 Hours		36	33	48	22	23	17	1	180
12-17 Hours	1	28	28	26	14	16	5	4	122
18-23 Hours		9	14	3	2	3	3		34
24 Hours and Over	2	29	29	13	14	13	8	2	110
Totals	5	123	131	138	96	100	49	9	651

Table VII

TEMPERATURE DURING LABOR AND POST-PARTUM

		Age								Totals
		Under 15	15 19	20 24	25 29	30 34	35 39	40 44	45 & Over	
Temperature Over 100°	Labor	1	52	38	40	20	15	7		173
	Post-Partum	7	86	101	83	43	33	22	5	380
Temperature Not Over 100°	Labor	4	77	105	112	93	82	45	7	525
	Post-Partum	1	52	62	72	71	71	35	3	367

Table IX indicates the presence of Albumin in Urine Classified according to the number of pregnancy and by race. It seems significant that during the first pregnancy albuminuria is much more prevalent in white women than in subsequent pregnancies. It should be borne in mind, however, that perhaps some of the albuminuria that is detected during the first pregnancy serves as a contra-indication for additional pregnancies. The percentage of albuminuria in other age groups does not show significant differences. The fact that 65.9 percent of the total included in this tabulation showed albuminuria gives statistical support to the practice of making urine examinations on pregnant women.

Table VIII

MAXIMUM BLOOD PRESSURE BY AGE AND COLOR

Systolic Pressure		Age								Total Number	Per Cent
		13	14	15–19	20–24	25–29	30–34	35–39	40–44	45 & Over		
119 or Under	W			9	17	14	7	11	3	1	62	12.4
	C		1	6	4	2	4	6			23	9.5
120 to 139	W			12	40	43	26	15			136	27.3
	C		2	23	14	8	6	5	2		60	24 8
140 to 159	W			8	11	12	10	11	7	1	60	12.0
	C			5	10	5	5	4	2		31	12.8
160 to 179	W			13	11	19	9	6	9		67	13.4
	C	1		12	4	4	5	1			27	11.2
180 and over	W		1	28	33	32	28	31	19	1	173	34.7
	C		2	25	19	19	12	16	7	1	101	41.7

Table X gives data concerning certain Obstetrical and Surgical Procedures by race and by number of pregnancy. In approximately 30 percent of the total deaths some surgical procedure was employed. In the white there was more surgery than for the negro. Here again for profitable evalu-

Table IX.—ALBUMEN IN URINE

(Only those tabulated in which the question was answered)

	Total	Albumen		Per Cent Positive
		Present	Absent	
1st Pregnancy				
Total	346	240	106	69.4
White	209	156	53	74.6
Colored	137	84	53	61.3
2nd and 3rd Pregnancy				
Total	146	94	52	64.4
White	107	67	40	62.6
Colored	39	27	12	69.2
4th and 5th Pregnancy				
Total	86	55	31	64.0
White	65	41	24	63.1
Colored	21	14	7	66.7
6th Pregnancy and Over				
Total	176	108	68	61.4
White	123	74	49	60.2
Colored	53	34	19	64.2
All Pregnancies				
Total	754	497	257	65.9
White	504	338	166	67.1
Colored	250	159	91	63.6

Table X.—OBSTETRICAL AND SURGICAL OPERATIONS

Operation			1st Preg.	2&3 Preg.	4&5 Preg.	6th Preg. and over	Totals
Forceps	Forceps Delivery	W	60	17	4	24	150
		C	26	6	4	9	
	Not Forceps Delivery	W	181	103	67	137	776
		C	139	48	26	75	
Caesarean Section		W	34	19	6	7	93
		C	19	4	1	3	
D. & C.		W	2	0	0	0	4
		C	2	0	0	0	
Pack		W	2	2	0	1	8
		C	3	0	0	0	
Version		W	16	12	10	28	117
		C	6	7	5	23	
Extraction		W	5	5	0	2	20
		C	7	1	0	0	
Repairs		W	28	8	5	4	63
		C	8	3	2	5	
Totals		W	147	63	25	66	455
		C	71	21	12	40	
			218	84	37	106	

Table XI

METHOD OF DILITATION OF CERVIX BY COLOR AND AGE

Method		Age								Total
		Under 15	15 19	20 24	25 29	30 34	35 39	40 44	45 & Over	
Spontaneous	W	1	60	82	75	63	57	32	5	375
	C	5	60	37	30	22	26	7	1	188
	T	6	120	119	105	85	83	39	6	563
Manual	W		6	16	15	14	18	11	1	81
	C		7	4	7	2	8	1		29
	T		13	20	22	16	26	12	1	110
Instrumental	W		1	4	4	1	3			13
	C		3	2	1	3		1		10
	T		4	6	5	4	3	1		23
Totals	W	1	67	102	94	78	78	43	6	469
	C	5	70	43	38	27	34	9	1	227
	T	6	137	145	132	105	112	52	7	696

ation of the data available we must depend upon the clinician. We should call attention to the fact that for all of the conditions much additional information is available in the complete report and can be supplied to those applying for it. For instance, if a physician wishes to write a paper about the disasters of Caesarean operations, he can get such information as the age distribution, the temperature, the blood pressure, geographical location, etc.

Table XI gives the method of Dilatation of the Cervix by Color and Age.

Time is altogether too limited to give more than a few of the tabulations. Therefore, in this introduction we have included only one table from the data concerning the past history of the patients.

In Table XII is given the Previous Abortions and Miscarriages by Age and Color and the Number of Pregnancy. It seems significant that more than 34 percent of the total gave a history of one or more interrupted pregnancies.

Table XII.—PREVIOUS ABORTIONS
BY AGE, COLOR, AND NUMBER OF PREGNANCIES

		Age							Total
		Under 15	15 19	20 24	25 29	30 34	35 39	40 44	45 & Over	
One Previous Pregnancy	W		7	27	27	14	4	2		81
	C		7	18	5	5	2			37
Two Previous Pregnancies	W			9	11	8	9	2		39
	C		1	13	8	3	3			28
Three or Four Previous Pregnancies	W			5	25	23	17	5		75
	C			5	13	8	3	3		32
Five or Six Previous Pregnancies	W				10	24	20	17	1	72
	C			1	9	13	6	1		30
Seven or More Previous Pregnancies	W			1	4	16	34	34	5	94
	C		2	1	5	13	26	11	2	60
Total Abortions	W		7	42	77	85	84	60	6	361
	C		10	38	40	42	40	15	2	187
	T		17	80	117	127	124	75	8	

It is encouraging to note that after many years of pioneering effort Dr. G. M. Cooper has been rewarded with reasonably adequate resources with which to promote a maternal health program.

Although it is realized that many facts have not been revealed in this

hasty preview of the data obtained in this five year study, it seems justifiable to draw the following conclusions:

1. Maternal mortality is unnecessarily high in North Carolina.

2. The data obtained in the five year study is a fair sample of the State's maternal mortality problem.

3. That the toxemias of pregnancy are the outstanding causes of maternal deaths in this State.

4. That no adequate prenatal care was given to 95 percent of the pregnancies which resulted in disaster.

5. That elevation of temperature is suggestive of infections.

6. That abnormally high blood pressure and puerperal albuminuria are danger signals.

7. That a detailed analysis should be made of the available data on maternal mortality.

8. That a critical study of the problem should be made by clinicians.

9. That potential mothers be made to realize that their security depends largely upon adequate prenatal care and competent obstetrical service.

10. That the process of bringing forth new life can and will be made less dangerous in North Carolina.

Chairman Bradford: The State of South Carolina, I understand, a few years ago at a session of the Legislature appointed a committee to study maternal mortality in that state. This committee has made several investigations which have been published in booklet form. We are fortunate to have here this afternoon Dr. Seibels of Columbia, South Carolina, chairman of that committee, to open the discussion of this paper.

Dr. Seibels! (Applause)

Dr. Robert E. Seibels (Columbia, S. C.): Mr. Chairman and Gentlemen: I feel it is a very distinct privilege to address your Society. Perhaps it is a handicap to talk to you at this time of the afternoon after you have had such eloquent and able speakers. I am not going to take advantage of the very kind and cordial invitation of your Chairman to talk just as long as I would like because I am afraid I would like to talk too long. I am going to be as brief as I can.

The statistics given this afternoon by the Board of Health of course quite outnumber ours in South Carolina, because ours only cover a period of two years. You have a larger number of births, and while your death rate per thousand live births is slightly less than ours, you still have a larger number of total deaths to talk about.

However, I was struck with the extraordinary uniformity of the percentage as compared with the Georgia report of 1933, and the South Carolina report of 1935 and 1936. It is really quite striking to see how the figures parallel. So I feel that in this part of the country—Georgia, North Carolina and South Carolina—our problems are very much alike.

I think those of us who work with figures and statistics sometimes feel like the mother of a firstborn—no matter how ugly the neighbors think it is, she thinks it is a perfectly marvelous thing. When you have sent out five or six hundred questionnaires, jogged the doctor's memory and perhaps have gone to see him to get him to fill out the questionnaire, and perhaps have gotten back 450 answers, you feel very proud of the figures, no matter what they reveal.

I think sometimes chairmen of committees dealing with figures are too much interested in the figures and forget that they represent human lives. That is what we want to do; we want to think of this as saving human lives rather than reducing the North Carolina rate from 6.5 per thousand, or reducing the South Carolina rate from a flat 8 per thousand. We want to think in terms of saving human lives that can easily be saved.

It has been suggested that we don't talk about preventable deaths, and that brings me to something that I want to touch on later, but perhaps I had better speak of it now. When a woman comes to you, or is brought to you, after having had convulsions for twenty-four hours, swollen, whose blood pressure to your amazement is only 160 systolic, perhaps 110 diastolic, there is not much you can do to prevent that death. Almost anything you do is just a little bit more than that patient can stand. These are controllable deaths, gentlemen, if we can get to them soon enough.

I was particularly impressed with the statistics on prenatal care. I think we have talked about prenatal care until a good many of us get rather nauseated at the sound of the word. There isn't any such animal in South Carolina; when we look at the death certificates and talk to doctors, adequate prenatal care is practically unknown.

What do we mean by prenatal care? That is the care of a woman between the third and fourth month of pregnancy, every two or three weeks an examination, recording her blood pressure and her urine, taking a Wassermann, and if it is suspicious of being positive, giving her prophylactic treatment; actually seeing that woman and talking to her, seeing how she is getting along, and seeing that she is receiving adequate care.

There is one thing that the committee in South Carolina has accomplished, which I think is distinctly worthwhile. We found that a large number of deaths were being attributed to pregnancy. We got the Board of Health to add to the standard certificate this query: "Was this death directly due to pregnancy or not?"

A number of cases were being sent in that apparently were puerperals. Investigation showed they were not. There is some queer inferiority complex perhaps in the American physician's mind that if a woman is pregnant and dies he must put her down as a puerperal death, regardless of whether she was hit by an automobile, or died from poisonous liquor, or was hit over the head with a piece of stove wood. She was pregnant and therefore it was a puerperal death. She developed influenza, went out in the rain and contracted pneumonia and died, but it was a puerperal death.

The chief of the Bureau of Vital Statistics has a very suspicious mind in South Carolina. If a woman from fifteen to thirty years of age dies of bronchial pneumonia he puts a red check mark on it, which means "probably puerperal." He was probably right, that it was a case of abortion that became septic, and the woman died of pneumonia.

We can't deal with this intelligently unless we know what we are dealing with. I understand in England and on the Continent no case is reported as puerperal unless no other explanation of death can be found. As Dr. Schumann said of Caesarean section, regardless of what else she had, that is what she died of.

I think perhaps our South Carolina rate of 8 per cent, and perhaps your rate of 6.5 per cent per thousand is rather high if we are going to compare them with the Continental statistics. The British rate of 2 or 3 per thousand, if it had the additional burden of influenza, chronic nephritis, perhaps diabetes, all these things, to deal with, might come up even with ours. But whatever explanations we make of this rate, gentlemen, however we doctor it and kid ourselves with it, it is higher than we can possibly face with equanimity.

Your Chairman said that we were a legislative committee. We have escaped any political interference so far. It is a committee from the State Medical Association working in conjunction with the State Board of Health. Our committee consists of six members, approximately one for each county or district. The questionnaires are sent to each committeeman. He in turn sends it to each county, and each county health unit gets the information.

We have deliberately done it in that rather cumbersome and troublesome fashion because we want the medical men of South Carolina to realize that this committee is attempting to cooperate with them, to help them with their problems in their communities. Almost each section of the state is different. I think it is a mistake for us, therefore—to return to the statistics for a moment—to spend too much time with the figures. What we want to do is to go to the doctor in a small rural district who perhaps is cooperating with lots of ignorant midwives and examining the urine of the patients of these midwives without compensation. When that patient dies—he has never seen her—he comes down, looks at her, signs his name, and he takes the responsibility for that death when he has never seen the patient alive. That information often comes out through this personal contact with the physician who signs the certificate.

So far as medical care is concerned, we feel that there are two things for which the medical profession can be criticized. Both of them I feel have been touched on adequately this afternoon by various speakers. One is the fact that the hospitals are a little inclined to let their staffs become excited because of the fact that the patient has been rushed in in an ambulance, and, with a few words, "forceps—" the machinery is set in motion and the whole thing is over in a few minutes without adequate care,

without adequate thought directed to that patient, without finding out the needs of that patient.

The so-called Cleveland plan, worked out by Dr. Steele of Cleveland, Ohio, is one that everyone who studies mortality rates will come in contact with sooner or later. That is a plan that has been definitely worked out on paper, and Dr. A. J. Steele of the Cleveland Clinic will be glad to send you a copy of it.

In brief, each hospital in Cleveland has been organized under a director of obstetrics. No major obstetrical operation can be done in any hospital without notifying that director and having a consultation. There are a good many things that come to your mind, I know, but times does not permit my mentioning them. They have all been taken care of. Each patient with a major obstetrical problem is surrounded by all the skill, assistance and thought that can be had in order to prevent hurried, meddlesome obstetrical operation. The rate in Cleveland has dropped to less than one in a thousand since the institution of that plan. I think staffs of hospitals should call the obstetrician more sharply to account for his disasters.

However, if in South Carolina we had no obstetrical deaths in hospitals, gentlemen, we wouldn't even scratch the surface. That isn't where these women in South Carolina and possibly in North Carolina are dying. They are dying twenty or thirty miles from the hospital; perhaps fifteen miles from the nearest physician. Let me illustrate, for instance, in Richland County and the community surrounding Columbia. Columbia has an area of approximately nineteen square miles and has 135 physicians. Richland County has an area of 900 square miles and, outside of the city of Columbia, has 23 physicians, two of them seventy years old. That is the possibility the population of Richland County has for prenatal care outside of Columbia.

We can add to that the various hospitals. But what are we doing for the woman outside of Columbia to give her prenatal care or any kind of care? Not a thing.

The Richland County Library sends out a truck loaded with books, in charge of two pretty girls, and in that way brings reading material to people throughout the county. Don't we have to do somewhat the same thing to carry prenatal care to the patient who is unable to come and get it?

One of the methods by means of which we hope to increase prenatal care is the increased facilities under the program that we might call putting syphilis into society. It has now become a word that we can say over the radio and write out in magazines. If we are going to examine these people for syphilis and take their Wassermanns, and give them adequate antisyphilitic treatment, perhaps we can bring in prenatal care in the same way. One of my keenest interests in this subject is to prevent state medicine from coming in and giving these people the care they need, and the first thing you know, giving it to our private patients, too.

If any syphilitic, or potential syphilitic can go and get his blood examined free, can get anti-syphilitic treatment free and can be put into a hospital, if necessary, to be treated, the next step is—well there is no use to go further on that line; you can follow it out just as well as I can. So in order to handle that efficiently right in our front yards of medicine, I feel the medical profession has to take notice of this high death rate and do what it can to control it.

We want the privilege of treating the people in our area. We ask the Legislature to pass laws to prevent unauthorized persons from treating people, treating the sick, for money, but we are a little shying off from our responsibility and saying, "Well, she lives out of my area. She lives closer to Dr. So and So. I am tired. I have been up all night." Each County Medical Society, gentlemen, has to work this out for itself or Uncle Sam is going to come down and do it for us.

Leadership in the profession has to guide the education of these people. The average woman in the country doesn't know what prenatal care is, why she should have it, or where she can get it.

Some of my friends who practice in the smaller communities say, "Why, I can't get my patients to come to me, and, besides that, they don't pay me but $15 for the delivery. I can't afford to see them every three weeks, examine a specimen of urine and send a Wasserman down to Columbia."

It appears to me that you are getting paid for what you do. I believe if we will teach these people what it is we have to offer them, convince them that it is worthwhile, we will manage to get moderately adequate pay for our work.

It is so easy in the eyes of the man off by himself in the woods for a committee to sit down in Columbia, or in Charlotte, or in Raleigh, and criticize him for what he is doing. It reminds me of an experience I had during the war. When we first went to France we had an order from the Surgeon-General of the American Expeditionary Forces with all the trimmings, to the effect that when you had diagnosed pneumonia in a soldier he could not be treated in any smaller unit than the base hospital. My nearest base hospital was reached by truck, if you could get one. You went five miles and then you went to the station and waited for a narrow gauge railroad to come along sometime during the next twenty-four hours and pick up your man, put him in a box car, carry him over thirty-five or forty miles to a base hospital where, if they had a bed, they put him into it.

The first five men who got pneumonia went down and died. So I stopped having pneumonia. I diagnosed them all as acute bronchitis, treated them as best I could, and saved some of them.

After the Armistice an order was issued that if a man contracted pneumonia he could not under any circumstances be transported. You would walk along a line and a company commander would say, "Come

and see what is the matter with this sick nigger. He is kind of gray. I can't get him to move."

When you looked at him, you could tell from his breathing what was wrong with him. If you found him lying under a tree, you had to treat him under that tree and you couldn't even move him in out of the rain, according to the order.

Coming back on the boat there was a Colonel Shockney on board, of the Surgeon-General's office—what we called in those days a stuffed shirt. He said, "I could sit in my office in ....., look at the map and see the mistakes you fellows were making up at the front in taking care of the sick and wounded."

I said, "That accounts for some of the damn fool orders I got from the Surgeon-General during the war."

I think that we committees sometimes take just a little of that attitude, that we can sit in our office and see the mistakes that are being made out in the sticks. That is certainly not the attitude of the Committee in South Carolina. We want to help the medical profession solve this problem. As a final step in that, we have sent to each physician who has signed a death certificate a copy of this survey, with a covering letter, explaining our purpose and asking him to please write us, telling us what we can do to help him in his community.

Thank you very much. (Applause)

CHAIRMAN BRADFORD: The Section is deeply appreciative of Dr. Seibels' coming up from Columbia for this session.

The discussion of Dr. Hamilton's paper will be continued by Dr. Proctor of Raleigh.

DR. IVAN PROCTOR (Raleigh): I will not keep you but four minutes. When 2,746 women die at a time in which they are most important to their communities and to their families, during a five-year period within the State of North Carolina, that brings a most important subject before this meeting for consideration.

Dr. Hamilton has told you that it was impossible to survey and draw conclusions in a short period of time from the voluminous data, statistics and information that he has. I agree with you it is impossible to discuss it. I think, however, we should not pass it up with this report. We should, from this Section or the North Carolina Obstetrical Society, appoint a committee to go to Raleigh, to the State Board of Health, and work with these statisticians and these State Board of Health men, and study out this very important report, draw their deductions, formulate their conclusions, and have them printed, giving them to the public throughout this state and to the medical profession of this state.

Otherwise, we will have wasted five years of study which is most important and most valuable from the standpoint of reducing maternal morbidity and mortality.

We notice here that 906 of these 1500 women died from four conditions, and I think we ought to consider those four conditions: Eclampsia, 463; Septicemia, 232; Hemorrhage, 108, and Caesarean Section, 103. Those are taken in the order of importance. Each one of those conditions can be combatted, and that rate can be lowered.

I have some points to suggest, and one is for the public. If we will make use of the Federation of Women's Clubs as the American Society for the Control of Cancer has done, and asks them to go to the women of North Carolina and take them to a physician before the ninth month of pregnancy, we will combat some of the lack of prenatal care.

In our hospitals that have obstetrical practice, we should have certain requirements for the profession and the administration. We should have a trained obstetrician with an assistant, who is the director of that department and who should be consulted in all major obstetrical procedures of everyone practicing at that hospital. He should have a monthly gathering, where a report should be made and consideration given to all morbidity and all mortality that has occurred in obstetrical service in that hospital in one month's time.

There should be segregated and set apart a delivery room, not furnished with equipment that has been passed over by the operating department or some other department of the hospital, but furnished as a modernized, standardized obstetrical delivery room should be furnished, with resuscitation apparatus, aspiration apparatus, anesthesia apparatus, and with transfusion sets ready to be used if indicated.

We should have a well trained laboratory technician, which is just as important in obstetrical practice as in general surgery.

For the profession, I would suggest four things as to combatting toxemia of pregnancy. A rule which we have followed for ten years or more is that if a woman who has pre-eclampsia is put to bed for a period of a week or more, with absolute rest in bed and elimination of milk diet, who does not improve, that pregnancy should be terminated at once.

Second, in septicemia, in addition to our ordinary asepsis, we should institute the use of a mask to cover the nose and the mouth, that part of the body from which the streptococcus comes, and third, that we have a rule for placenta previa: that any woman who has sudden, causeless, painless bleeding in the last trimester of pregnancy should not be left until she has delivered and in many instances, her uterus and vagina competently packed.

Fourth, every physician can make two pelvic measurements: the posterior diameter of the inlet and the transverse diameter of the outlet. If he does nothing else that gives him the crux of the situation as far as the bony pelvis is concerned. If a Caesarean is necessary because of a contracted pelvis, if he isn't satisfied he can have a consultant in.

If we institute these points and put them into practice, I believe we will see a lowering in the obstetrical morbidity and mortality rate. (Applause)

CHAIRMAN BRADFORD: Dr. Hamilton's paper is now open for general discussion.

Dr. Hamilton, will you close?

DR. HAMILTON: I have nothing further to say.

CHAIRMAN BRADFORD: The Chair will now call for the report of the Nominating Committee.

DR. JOHNSON: Dr. Bayard Carter's name has been placed in nomination for chairman for the coming year.

CHAIRMAN BRADFORD: Are there any further nominations? If not, will some one move that Dr. Carter's election be unanimous?

. . . It was so moved, seconded, put to a vote and carried. . .

CHAIRMAN BRADFORD: Dr. Carter will be chairman of this section for the ensuing year.

The next paper on the program is "Management of Hemorrhage in the Third Trimester of Pregnancy," by Dr. Ernest Franklin of Charlotte.

DR. FRANKLIN!

. . . Dr. Franklin presented his prepared paper. . . (Applause)

MANAGEMENT OF HEMORRHAGE IN THIRD TRIMESTER OF PREGNANCY

By ERNEST FRANKLIN, M.D., Charlotte

During recent years there has been a great and increasing interest in the reduction of the maternal mortality rate. The management of infection and toxemia, the two greatest causes of death for the mother, is prevention in at least fifty percent of the cases. The next great cause is hemorrhage, which is not so easily prevented. The nearest thing to prevention of placenta praevia and premature separation is early recognition which comes with good obstetrical care.

[1]The work of Shute has a possibility of being valuable in the prevention of premature separation of the placenta. He feels that many early cases of slight separation of the placenta go undiagnosed. He studied his cases and made a note of any uterine pain and tenderness complained of during the third trimester. A great majority showed on the delivered placenta lesions, varying from fresh clots to an old white infarcto. The type of placental lesion depended upon the duration of time separating delivery and the uterine pain and tenderness. In those cases coming to Caesarean section the location of the placenta was compared with the location of any previous pain. The cases being delivered by version also had the placental side located. He found pathology to go with the pain experienced during the third trimester. The most frequently encountered and significant sign in

these early cases was the gradual appearance of a restricted, palm sized area of true uterine tenderness, accompanied by steady sacral backache. When this pain disappeared spontaneously, it usually recurred in the same location. Shute remedied this condition by the use of massive doses of wheat germ oil. It is very rich in vitamin E. He could relieve the pain in twenty-four hours by giving eight to twelve drams. If they were kept on a maintenance dose no further pain was in evidence. If the medication was withdrawn, the patient had a recurrence of pain. He states that his best results were obtained in women showing little or no evidence of toxemia. He has devised a test for the content of vitamin E in the blood. No case treated adequately has gone on to terminate as a classical case of premature separation of the placenta. He calls the condition an imbalance between vitamin E and estrogenic substances. It is also present in cases aborting spontaneously in early pregnancy. This work of Shute is presented since it is possibly on the right track to prevention of premature separation of the placenta.

This discussion is based on the incidence of six cases of placenta praevia and twelve cases of premature separation of the placenta in 1301 deliveries by the staff of the Charlotte Maternity Clinic during 1935 and 1936. It is an outpatient delivery service and is manned by two medical students, three obstetricians and a pediatrician. Since my title is "Hemorrhage in the Third Trimester of Pregnancy" my statistics will be presented as a series of eighteen patients bleeding in the third trimester, being aware that two entirely different conditions had hemorrhage as the cardinal symptom.

The incidence of syphilis was twenty-two percent. There were two maternal deaths showing a mortality of eleven percent. The fetal mortality was fifty percent, but there were three babies at seven months. Forty-four percent of these patients had toxic symptoms equally divided between placenta praevia and premature separation cases. [2]Nubiola and De Lee have both expressed the opinion that there is usually a toxic factor that arises in placenta praevia as well as in premature separation of the placenta. This causes an inevitable mortality rate in babies regardless of procedure used in delivery. It is greater in premature separation. There was one central placenta praevia, three partial and two classed as marginal. The prematurely separated placentas were classed as three complete and nine partial separations. It will be interesting to note that five of the premature separation cases had the membranes ruptured artificially; two had pituitrin in addition. There was one Caesarean section and hysterectomy. Of six placenta praevias one was delivered by a low Caesarean section and uterus packed, three by artificial rupture of the membranes, two by spontaneous labor, with spontaneous deliveries.

Since more than half of these cases were delivered at home our records of morbidity are calculated from the student records of a daily temperature reading and records of those hospitalized. It was thirty-three percent. All except one of the eighteen cases had one or more hemorrhages and it

was necessary to transfuse four or sixteen percent of these. It was necessary to pack vaginally only one of these patients according to the judgment of the student. A more mature judgment may not have deemed that necessary. Care was exercised in packing her and the morbidity was not great. She had a spontaneous delivery of a full term still birth, followed by a partially separated placenta.

It will be noted with a great deal of interest by some that there was no bag employed in any case either of placenta praevia or of premature separation. Another interesting fact is that the Braxton-Hicks version was not employed in a single case.

I wish to mention only two of these eighteen cases specifically and they are the two in which the mother was lost. They were both premature separations of the placenta. The first case to sum it up briefly was a primipara, who was toxic and suffered intermittent pain for twenty-four hours. She was being observed by a student who was not alarmed since her pains were to him apparently normal. She suddenly went into shock, was seen by a consultant, sent into the hospital with a diagnosis of premature separation of the placenta. She was immediately sectioned and hysterectomy done. She was given 1200 cc. of blood and 100 cc. of hypertonic glucose solution in saline before, during, and after operation. She ran a septic course; was given 300 cc. transfusions on fifth and ninth postoperative days and died of pneumonia and peritonitis on the twelfth postoperative day.

The second patient was a multipara who had been toxic. She was seen early one morning in labor with head coming in the pelvis and a two finger dilatation of the cervix with some bleeding. She was sent into the hospital and suddenly went into shock shortly after admission. The only available donor was an uncooperative husband. After much persuasion and more force 400 cc. of blood was obtained and given to the patient. She had had 1000 cc. of hypertonic glucose previously. The baby delivered with very little aid from perineal forceps. A completely separated placenta and clot followed. The patient was exsanguinated and so had little post-partum bleeding. It was simply a case of too long a delay and insufficient blood and she died shortly after delivery. [3]Diechman and Daily have said very aptly the answer to the question as to why there is a failure to lower the mortality rate from hemorrhage lies in the faulty use of blood transfusion in most instances. It is either due to too little volume of blood being given or too great a time interval elapsing before blood is given, resulting in irreparable damage to vessel walls, brain and other vital structures because of anoxemia.

An increased blood pressure, as follows the use of adrenalin, without blood volume to carry oxygenated blood to the viscera is undesirable. Ideally, the introduction of some suitable fluid to increase volume as well as pressure is desirable. Blood is ideal in shock from hemorrhage. Saline or isotonic salt, according to some recent experimental work of [5]Mathews

and Mazzola is of little value. It is too evanescent in its influence on blood pressure, since it attracts no tissue fluid into the vessels. The same might be said for weak glucose solutions. A smaller infusion of increased concentration produces the desired rise in blood pressure by increasing volume. In cats with shock from hemorrhage they showed that fifty percent glucose solution gave a rise of blood pressure, slowed the pulse and returned a normal pulse pressure. They also showed that if the animals received 50% glucose before the occurrence of hemorrhage they reacted much better from the standpoint of blood pressure drop and slower pulse than unfortified animals. If hemorrhage is expected it would follow that the patient might be expected to withstand the hemorrhage better if fortified with hypertonic glucose solution. Since we are living in an age of preventive medicine any agent preventing or relieving such a pathological condition is worthy of consideration in these acute shock cases.

Blood of course is the only fluid that will benefit the patient in a permanent way. It has its limitations of usefulness unless used early. [6]Brooks and Blalock using animals and subjecting them to simple hemorrhage by needle from the femoral artery produced shock. This was done and the blood pressure maintained at 70 m. m. Hg. The animals died in one hour. Another group was transfused direct and when pressure arose above 70 m. m. Hg. they were bled again. By this method life was maintained for several hours, but after a certain length of time they found that even though much more blood was introduced than withdrawn the blood pressure would not rise and death ensued. The transfusion was without benefit. At autopsy capillary congestion, hemorrhage, and necrosis was demonstrated in many tissues. Another group of animals similarly used and the withdrawn blood citrated and re-introduced with the same failure to respond to transfusion after a given time. Thus, it was shown that the prolonged low tension and low volume of hemorrhage-shock was fatal. After a number of transfusions the animals failed to respond to replaced blood volume. It was explained as a diminution of oxygen-carrying power of the blood to the tissues. This deprivation of oxygen was causative in markedly altering the tissues.

Blalock states that because of the decrease in blood volume incidental to the hemorrhage, a compensatory vaso-constriction maintains arterial pressure near normal. If bleeding continues, pressure drops in spite of vaso-constriction. If pressure is low too long vaso-dilatation occurs, then blood transfusion is of no avail. The conclusion is that hemorrhage can produce concentration of blood, negative response to transfusion and alteration of body tissue.

Diechman in a recent paper quotes McKesson in saying that a pulse pressure of 20 m. m. Hg. maintained for twenty minutes or more is usually fatal. Another point mentioned is that loss of forty-five percent of hemoglobin or one-third of blood volume is usually fatal.

The management of a bleeding woman in the third trimester of pregnancy resolves itself into expectant treatment, not in the sense of waiting, but in preparing your patient and your equipment before proceding. While typing the patient for transfusion and while the instruments are being prepared the patient must be kept warm. Hypertonic glucose must be given if she is in shock even mildly. By history and abdominal examination these important facts are elicited: amount of blood loss in relationship to the size of patent; parity and age; period of gestation; number of previous vaginal examinations, if attended by other than yourself; is baby alive; is patient in labor; and if membranes are ruptured. By this time the doctor is amply prepared to proceed to a vaginal examination by the strictest antiseptic and aseptic precautions. He never forgets that boon companion of hemorrhage-infection. In my opinion a rectal examination is never indicated in a bleeding case. It is actually damaging, while revealing no information which a vaginal could not give more safely. It will give all necessary information and not cause fresh hemorrhage in placenta praevia by dislodging the clot. This accident forces one to use a bag or Braxton-Hicks version as an emergency procedure. I consider them as such. A decision can be made at this vaginal examination as to rupturing the membranes. If this is the procedure of choice, it is better to rupture the membranes at this time rather than invade the vagina again.

We now turn to the management of these two pathological conditions separately. Treatment varies according to the type of placenta praevia. The low implantation is best treated by rupturing the membranes and allowing the head to tamponade the cervix. Occasionally this is a place where a sterile vaginal pack may facilitate the dilatation of a long conical cervix in a primipara. The marginal and partial placenta praevias will in many instances do well with this treatment. There are sure to be cases in which the doctor will wish that he had selected Caesarean section as the mode of treatment. Caesarean section is my choice for partial placenta praevia. If labor is too sluggish, two or three minim doses of pituitrin are valuable. The centrally situated placenta demands Caesarean section for its controlled management.

Lacerations of the cervix are fraught with great danger and usually hemorrhage so profusely that packing is the only recourse. In doing a Braxton-Hicks version the great temptation is to extract the baby through an undilated cervix and tears of the cervix result. After the baby has delivered the body and the head is held up by an undilated cervix, the baby is usually dead. A craniotomy at the base of the skull collapses the head and allows it to slip through without tearing the cervix. It is better to do a craniotomy and deliver the baby as soon as possible, for hidden bleeding may occur behind the head if dilatation of the cervix is awaited. Extreme care should be exercised in any forceps delivery on a placenta praevia patient to avoid tears in the cervix.

It is better to use two to three minim doses of pituitrin to keep the

baby's head forced in the lower uterine segment. A tenaculum attached to the baby's scalp has been used for this purpose. I do not like this procedure.

The Braxton-Hicks version is a useful procedure. In my opinion it is not an elective procedure. If the membranes have been ruptured and the head does not tamponade effectively it may be resorted to. If profuse or uncontrollable hemorrhage following examination occurs it may save the day. The bag is used in much the same way as the Braxton-Hicks version. There is no place for accouchement force in the management of placenta praevia.

The patient who wishes to await the viability of the baby deserves special consideration. [9]For example, a young woman in her seventh month of pregnancy has a placenta praevia diagnosed by her obstetrician. For a very good reason she desires to carry to term. The obstetrician should explain in detail and emphasize her danger to her and her family. She and her family should assume the whole risk. The decision should preferably be in writing should conservatism lead to disaster. This may avoid an embarrassing situation for the doctor. It is understood precautions should be thrown about her to prevent disaster overtaking her. This is Schumann's advice in handling such a case.

In premature separation the case presenting hidden bleeding is the most baffling. The blood pressure, pulse, and tension of the uterus are our guides. In a multipara in labor with partial dilatation of the cervix, I would rupture the membranes and wait. I would expect to be prepared for active interference. If the labor was too sluggish, small fractional doses of pituitrin would be used. Given the same patient who was a primipara with even moderately severe symptoms she would be sectioned. It is not safe to wait after the diagnosis is made to do the section. The delay will only allow time for the blood to force its way into the uterine muscle. This would necessitate hysterectomy.

The case presenting obvious bleeding gives the doctor an accurate account of the actual blood loss. The multipara may be delivered as stated above. Usually a greater chance can be taken with the primipara. The membranes may be ruptured and pituitrin employed if necessary. In these cases the blood is not under as great a tension in the retro-placental space. The uterus is consequently not damaged as much. Regardless of which direction the blood is forced some is always pushed into the uterine wall with damage. It is called the placental apoplexy of Couvelair. This prevents the uterus from expelling its contents with maximum efficiency. Labor is retarded. The irritation of this blood throws the uterus into a tetanic contraction. This is different from the rhythmic contractility and retractility of the normal uterus in labor. Pituitrin helps restore this normal action of the uterus.

Forceps and version are valuable aids in cases for quick delivery. The emergency in these cases gives no license to proceed in the face of an undilatated cervix or other contra-indication.

SUMMARY

1. The fetus has an uncertain status at best in these two conditions. Hurrying in order to save the baby is usually fatal to mother and baby. It is not good practice for the mother to take any unnecessary risk for the baby's safety.

2. Each patient is an individual problem.

3. Transfuse these patients early.

4. Be prepared to act before the patient is in extremis from hemorrhage.

5. There is no place in the treatment for accouchement force.

6. Caesarean section is oftentimes the most conservative treatment of these conditions.

7. Do not minimize the severity of the condition being dealt with.

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CHAIRMAN BRADFORD: The discussion of Dr. Franklin's paper will be opened by Dr. Spicer of Winston-Salem.

DR. R. W. SPICER (Winston-Salem): As Dr. Franklin has said, bleeding in this last trimester of pregnancy is very important and the vital statistics show that the mortality is very high. He also mentioned the methods of rupturing the membranes, the bag, and the Caesarean section, and the type of treatment that would be instituted would depend upon whether the mother was in labor or not, or whether there was any dilatation and the condition of the mother and baby. It then depends upon the skill of the attending physician.

I think if these patients are at home—as a great many of his patients were—the Braxton-Hicks version should be used, although it is not the ideal procedure. We know that with the Braxton-Hicks version we get far greater mortality in the babies, but a better condition in the mothers. This is due to the fact that these babies are usually premature to start with and traumatism is greater. We don't like to use packing, but in these cases in the home it is very necessary if the cervix is not dilated, as he suggested, that we use some form of a pack.

I think in that instance it is better to use cotton pledgets soaked in some good antiseptic solution where you get a much firmer pack, to wait for enough dilatation to be able to insert one or two fingers and get one

leg down, and then leave it for nature herself to push the baby on through. The tendency in these bleeding cases is to get a little over-anxious, and, as he mentioned in connection with the laceration of the cervix, that is always fraught with a great deal of danger to the mother. You are not considering the baby much, because you usually always use the Braxton-Hicks version if the baby is not viable, or if it is dead, with better results.

If the patient is in the hospital we have a wider scope to deal with. In this case, if there is no dilatation, it is well enough to rupture the membranes and leave it at that; or with the same procedure, if you have a dilatation with very little bleeding, or a somewhat low implanted placenta, I feel bags are better. In his series, no bags were used. I think that is a personal matter. If a person likes bags, I think that is much better than packing, and I think statistics show that the less packing you use the better is the result. These bags can be used either intra-uterine or extra-uterine. If the membranes are not ruptured I feel you have a better chance if you put these bags extra-uterine, for the reason that if you get a full dilatation, and you want to go further, or even in those cases where something happens and you have a concealed hemorrhage above and you wish to do a Caesarean section, it is not done with as much danger as if you had already ruptured the membranes and the potential infection instituted.

As to Caesarean section, I think in later times Caesarean section is the treatment of choice. The statistics of the larger clinics of a number of men like DeLee, show a mortality as low as one per cent or a fraction. DeLee has done as many as 101 Caesarean sections of this condition without a death.

Opinion is divided as to whether the Caesarean should be of a low or of a classical type. In the low type, even though it is more vascular to deal with so far as the implantation of the placenta being low is concerned, it is not enough to warrant the classical type, I feel. In these cases, the advantage of low Caesarean is that a great many of them are potentially infected, and this type of Caesarean was developed for that type of a case. (Applause)

Chairman Bradford: The discussion will be continued by Dr. Ruark of Raleigh.

Dr. Robert Ruark (Raleigh): Dr. Franklin and Dr. Spicer have so carefully covered the active management of these cases that I feel it is quite apropos for me to speak on the prophylactic angle of the case.

I want to commend Dr. Franklin for the excellent way he has prepared his paper.

Complications of all kinds, including hemorrhage, are more likely to happen in those cases which have not had adequate prenatal care. A woman who bleeds freely, with a hemoglobin, say, of anywhere from 60 to 75 per cent, naturally doesn't have the resistance, nor the chance of pulling through that a woman has who starts with a hundred per cent. That

patient, with adequate calcium and phosphorus stowed in her tissues, is a great deal less likely to bleed than a mother who has an already inadequate supply of calcium and phosphorus which has been severely drained by her coming offspring.

I have noticed that in ward practice where these patients cannot get the proper amount of mineral constituents that are necessary, they bleed a great deal more profusely than the patients who have adequate minerals. For that reason I always place my patients on an iron routine regardless of the hemoglobin content at the time of the first examination; also a routine method of giving calcium and phosphorus with all of the necessary vitamins in those cases. In such cases I say that hemorrhage is notably lacking.

The association between these conditions and the hypertensive toxemias of pregnancy cannot be overlooked. Prevention of the toxemias will prevent many cases of abruptive placenta. By preventing these toxemias we naturally prevent a great deal of potential cases of hemorrhage. I doubt whether there is a toxic factor in placenta previa. However, the patient who is well fortified before delivery more easily stands the hemorrhage and shock of the delivery.

I have enjoyed this paper thoroughly. The field has been covered a great deal more adequately than by the usual paper, and I would like to thank Dr. Franklin for giving it to us. (Applause)

Chairman Bradford: Dr. Franklin's paper is now open for general discussion.

Dr. Edward A. Schumann (University of Pennsylvania, Philadelphia): Mr. Chairman, may I ask one question and make one statement?

The question I would like to ask is how to treat potential placenta previa in which a woman in the sixth month of pregnancy—the fifth or sixth month—has a sudden fairly sharp hemorrhage, and upon examination, the diagnosis of placenta previa is made. I confess I have never formulated a plan of treatment for this particular type of occurrence, and it has happened to me on several occasions. It often leads to another violent hemorrhage in the next month or two. The termination of the pregnancy either by section or bag induction leads to a premature and dead baby. I confess I am at a loss when these occasional cases occur.

The other point I wish to make is the tremendous advance in diagnosis suggested by Erner of Minneapolis, in which 40 cc.'s of opaque solution are injected in the bladder and then the x-ray film made. If there is a placenta previa the separation of the concavity of the half-filled bladder and the fetal head is well over two or three centimeters. If there is no placenta previa the head is down in close contact with the concavity of the bladder.

We have tried this in six or eight cases, and have measured the accuracy of the diagnosis so made. (Applause)

CHAIRMAN BRADFORD: Is there any further discussion? If not, the Chair will ask Dr. Franklin to close.

DR. FRANKLIN: I want to thank those who discussed my paper. I am glad to see that a man of such eminence as Dr. Schumann has been troubled by this question as we all have. It is a question that needs a great deal of choice in handling the patient as he described.

We had no occasion to x-ray these patients. They were mainly out in the country, some of them a good many miles from the hospital. We thought they would be better handled in their private homes than if we transported them to the hospital.

I again want to thank everyone who discussed my paper.

CHAIRMAN BRADFORD: The last paper will be, "The Structure of the Pelvic Floor and Its Treatment," by Dr. Cooke of Winston-Salem.

I wish to call attention to the fact that there are a number of copies here on the desk of the Report of the Committee on Maternal Welfare and Maternal Mortality in South Carolina, if anyone wishes to have a copy.

Dr. Cooke!

. . . Dr. Cooke presented his prepared paper at the conclusion of which he showed some motion pictures. . .

THE PELVIC FLOOR AND ITS TREATMENT

A. THE INSTIGATION

The preparation of this paper was prompted by the following experiences.

1. The finding of perineums which have had operative repair either at the time of tear or later which did not fulfill the requirement of normal perineum.

2. The finding of cases of the marked relaxation of the pelvic outlet which have been overlooked in previous examinations.

3. The total pathology of impaired pelvic floors is not fully appreciated by the general profession.

B. A PROMISE

Not to abstract the work of other authors on a subject so old. The deductions here submitted are derived entirely from the writer's own experience in dealing with the subject 15 years.

C. BASIS

The basis of this discussion will be made principally on the fact that the thickness of the pelvic floor is more important in the consideration of malposition of the pelvic organs than any other factor. As we are aware the main function of the pelvic floor is to hold in or support the lower abdominal organs, and at the same time allow exit for the excretion from bowel and bladder, and exit of the products of conception as well as to

permit the process of sex function. The first two, namely, bowel and bladder, action are probably least effected by the usual pathological process which weaken the pelvic floor and are only involved in the most extreme degrees of this derangement, and it is the minor or least noticeable degree with which we are most interested here.

The sex function is often lost sight of while as a matter of fact it is most important and yet may be entirely lost by very mild degrees of relaxed pelvic outlet. A most important function, or that which has the most to do with the general well being of the organism as a whole, is that of maintaining the proper position of those pelvic structures in which the nervous rentivation is so highly developed and far reaching in their functions. Of these the position of the uterus is most important. We can not have a malposition of the uterus without disturbing the ovaries and especially their circulation. The bowel and bladder are of importance. The function of the lymphatics and sympathic systems of the pelvic.

We have four pairs of ligaments described as maintaining the position of the uterus but all of these put together do not have as much to do with the position of the uterus as the thickness of the pelvic floor.

The vagina is a membranous tube with no support throughout its entire length, except the pelvic floor and yet it is surmounted by the heaviest organ in the pelvic, namely, the uterus. The position of the uterus is only important in two directions, namely, retro displacement and decensus, and the former, namely, retroversion rarely ever occurs without the latter, and the latter is always a result of a thinning of the pelvic floor. Another instigation for the preparation of this paper is the fact that I believe that a true and accurate description of the structure involved in the process of procidentia have not been generally taught and therefore not properly understood and corrected by all those who are active in the field of reconstruction in this important abdominality. There are those who still teach that to properly repair a perineum the raw fibers of muscles must be brought together and sutured. It will be recalled that there is no place in the body where muscle fibers are attached to each other laterally. All muscles are either attached to a tendon, fascia, or an apaneurosis. Therefore it is not only a fallacy to stitch the fibers of the levator ani muscle together laterally, but to do so defeats the purpose of the operation because where this is done there must of necessity be a gap in the fascia which normally holds these muscles together. Another process which is often not appreciated is the fact that most often relaxation of the pelvic floor is not due to a defect in the muscle but in the pelvic fascia. So often the pelvic fascia tears without any external evidence in which case it is never repaired at the time. The bad effects are often delayed for months or even years. Also we are prone to forget that there are two layers of pelvic fascia. One above the levator ani muscle and the other below, and that they come together in the mid-line to form the median raphe which separates the two muscles and connects these two layers of fascia together

between the vaginal and rectal openings, as well as between the rectum and coccyx posterially. These two layers of fascia come together anteriorly to form the triangular ligament which is responsible for the support of the bladder, urethra, and anterior vaginal wall. Therefore to overlook this possibility is to be unmindful of another cause for procidentia, also to fail to fully consider and diagnose pathology in this area makes reconstruction incomplete.

Heretofore the profession generally has considered that abdomality in these structures occurred only as a result of visible defects occurring in labor. In making examinations we too frequently do not consider the symptoms in determining the efficiency of these structures, and where labor has not occurred do not consider them at all, while the writer is thoroughly convinced that thinning out of the pelvic floor as well as all the abdomalities secondary to such a process may be present in the nulipara. This pathology may be congential or acquired. In those persons whose nutrition has been impaired by wasting disease or in those types of long slender and poorly developed muscular structures generally may have a pelvic floor which is so thin as to allow procidentia and retroversion with all their concurrent train of pathology. General visceroptosis the rule.

These points are proffered here because of the tendency for many of us to be mindful only of the size of the openings in the pelvic floor. The size of the vaginal orifice is only of secondary importance: Therefore to reduce the size of the vaginal orifice only is a fallacy not to be overlooked in our every day work.

Another purpose in presenting this paper is to consider methods of repair. We have seen moving pictures depicting perineor rhaphy which although approved by authorities in this work do not appear to be proper. Reference here is made to those operative procedures which leave suture lines and scar tissue running crosswise the perineal surface. We must remember that scar tissue does not expand and contract as normal tissue. We also would be reminded that normally there is a structure running horizontally which is analogous to scar, namely, the medium raphe. It is contended that any operative reconstruction procedure should leave the tissue as nearly similar to their normal condition as possible. A procedure which the writer has used for several years and which will be described in the pictures does this admirably, and has not been attended with failures. The pictures are self-explanatory and the procedure need not be described here. Suffice to say that before any attempt at closure of m.m. the peritoneum of the cul-de-sac should be pushed up and the superior layer of pelvic fascia brought together so as to restore the normal thickness of pelvic floor. Closure of the skin wounds in this area has been made by subcutaneous stitches using fine chromic catgut for suture. No stay suture of any kind has been used. Healing has been by primary union. Finally it is hoped by presenting this ppaer that the merits of vaginal hysterectomy may be made more apparent and its advantages more often made use of.

As inferred above, no ligament operation has yet been devised which will adequately abate the symptoms produced by descensus uteri. Therefore perineal repair alone can be used for this purpose. In some instances this procedure is inadequate. The writer is of the opinion that the uterus had better be out than left in without proper support. This is especially true in women who have all the children desired or who do not desire more children or those patients who have passed the child-bearing age.

In any instance where hysterectomy is to be accompanied by perinerrhaphy, vaginal hysterectomy can be done at the same sitting pervious to perinorrhaphy without as much danger or shock as to make an abdominal incision and then change for a minor, it is easier on the patient and the operator.

D. SUMMARY

Finding improper repair, and cases in which repair was needed and overlooked have been sufficient to warrant a new discussion of this subject. A thorough knowledge of the anatomy and physiology of the pelvic floor is not prevalent, this necessarily limits many operators' capacity to recognize and correct the pathology resulting from an impairment of these structures. The superior layer of the pelvic fascia must be considered and adequately repaired to perfect a perinorrhaphy. A simple and efficient operative technique is shown in pictures which leaves the structure and function of the perineum as nearly like the original as is possible today. It leaves no transverse scar tissue and healing by first intention has thus far ensued. Finally a wider use of vaginal hysterectomy is shown to be desired and it is therefore urged.

E. CONCLUSION

It is not at all intended to convey by this communication the idea that the writer means to infer that poor work is generally done in perineal repair, but it is believed that better work especially by those not specializing in this field can be done. Better work can be done in any field when a thorough knowledge of the anatomy, and physiology, and the pathology is constantly applied in general practice.

It is further contended that hysterectomy is not the formidable operation that we as well as laity have considered it. While I do not favor its use promiscuously it is oftentimes less dangerous and more apt to cure the patient than some of the procedures frequently used. When hysterectomy is desired and at the same time a perineorrhaphy is required vaginal hysterectomy is believed to be more often the method of choice than is generally used.

Chairman Bradford: The discussion of Dr. Cooke's paper will be opened by Dr. Frank Sharpe of Greensboro.

Dr. Frank Sharpe (Greensboro): The hour is so late that I will not take much time.

I enjoyed hearing Dr. Cooke's paper, and I also enjoyed seeing his pictures. I think that after all the crux of the thing comes back to the fact that many of these cases can be prevented at the time of delivery. I appreciate that that isn't the point of Dr. Cooke's paper.

I think that where the patient is hospitalized, where they can do proper perineal repairs, there are fewer cases of this happening. However, in the home, you are up against it and you still have to do the best you can. You will have to refer them back later for follow-up as Dr. Cooke has described.

CHAIRMAN BRADFORD: Dr. Cooke's paper is now open for general discussion.

DR. JOHNSON: I just want to bring out the amount of work that Dr. Cooke put in on this. He has done a lot of work.

CHAIRMAN BRADFORD: Are there any further remarks concerning Dr. Cooke's paper? If not, will you close, Dr. Cooke?

DR. COOKE: I have nothing to say.

CHAIRMAN BRADFORD: Is there any business to come before the Section? If not, I will declare the meeting adjourned.

. . . The meeting thereupon adjourned at five forty-five o'clock. . .

SECTION ON PUBLIC HEALTH AND EDUCATION

TUESDAY AFTERNOON, MAY 4, 1937

The Section on Public Health and Education of the Medical Society of the State of North Carolina convened at two-twenty in the Blue Room, Robert E. Lee Hotel, Winston-Salem, Dr. A. C. Bulla, presiding.

CHAIRMAN BULLA: In preparing this program, I intentionally made it brief. It is just a little briefer than I intended it to be. After I had prepared it I was notified by Dr. McBrayer that one of these papers was to be shifted to the General Session. Therefore, we have only three papers this afternoon, but, I realize, perhaps that is enough.

Our first paper is "The Relationship of a Private Practitioner to the Community He Serves," by Dr. O. S. Goodwin.

. . . Dr. Goodwin presented his prepared paper. . . (Applause)

THE RELATIONSHIP OF A PRIVATE PRACTITIONER TO THE COMMUNITY HE SERVES

By O. S. GOODWIN, M.D., Apex

I want to thank the committee for the invitation to read this paper. Being a worker and not a writer, I first declined. But when the matter was left open for ten days and Dr. Bulla called again in reference to it, I promised I would try it.

As I have just said, I am not a writer. I have been doing general practice thirteen years; and on the other hand, I have written only two papers. One the first year in private practice. I wasn't asked to write that first paper. I had some time on my hands. We all have plenty of spare time those first few months of practice! But what a different story it is thirteen years later! Also, I was very much interested in pellagra. Having finished in a northern medical school, I had seen only one case of pellagra. Consequently when I came South and found how prevalent the disease was, I felt helpless in treating it. I wrote the American Medical Association, the Southern Medical Association, and the Tice's Consulting Service for all the information they could give me on pellagra, and got enough to make a book. In my spare time, I worked the material into a paper, and concluded that I had a fairly good working knowledge of pellagra. This paper, with some changes, was read about four years later before our County Medical Society. Then *I* picked my subject.

For this, my second paper, my subject was picked for me, and remember, I am in the thirteenth year of my practice! The more I have thought

of the subject, "The Relationship of the Private Practitioner to the Community He Serves," the more difficult it seems and the less qualified I have felt in preparing it.

The relationship of the private practitioner to the community he serves takes in so many things that only some of what I consider the most important can be touched upon in this paper.

It is understood that the practitioner should have the proper training, character, personality, and tact for handling people. He should know how to be serious-minded and sympathetic under certain conditions; yet calm and positive and never losing his head when grave problems arise. He should always carry a spirit of cheerfulness and courage to the sick room, and he should be able to instill in his patients a feeling of confidence, which often is as much a determining factor in their recovery as the R/ he prescribes.

I divide my paper, roughly speaking, into four subdivisions:

1. Preventive Medicine
2. Curative Medicine
3. Civic Relations
4. Moral Relations
5. Politics I leave for some one else to discuss.

I am going to discuss them in reverse order.

The practitioner's morals should be above reproach, and we should conduct ourselves as gentlemen at all times. I often recall what Dr. Charles Mangum told a few of us one day between classes, as he was giving us some fatherly advice—which often meant more to us than some of the things he taught in the stiff laboratory. Any young man who is really in love with his work and has average intelligence, he declared, should make a fair success practicing medicine if he kept "plugging" and let women, drink, and dope alone. But in the same breath, Dr. Mangum said that he had seen many a promising young man mar his career by falling into the clutches of either of the three.

The practitioner should always support any program that the civic organizations promote for the best interest and welfare of the community at large. Often we should be the leaders in such work, for by training we are better qualified than the average citizen. So far as we are able, we should contribute both time and money to worthwhile causes. A great field is open to the physician who likes young people, especially if he is interested in the sports which young people engage in. When such is true, there is probably no other man in the community who has greater influence on or is in a better position to help boys in their teens. He should not refuse when invited to talk to them. A few heart to heart talks with these boys in Boy Scout clubs, Sunday school classes, etc., often have much more influence in the field of prevention in venereal diseases and excessive drinking than the physician could accomplish in several times the amount of time

and effort spent in his office, and with much more lasting effect. Today, as I look over the years spent in training, both academic and professional, the things valued highest are not those which were taught me out of books, but principles and perceptives, things not to be found in books. Certainly, if our lives are to mean to our respective communities what they should, we must leave something with them other than our prescriptions!

Curative medicine—I do not like the terminology. After all, we do not cure the patient; we only apply the best methods of treating disease that we have at hand, and the Higher Power that rules over and above all administers the cure. It is up to us to avail ourselves of the best possible means of fighting disease; but let us always be mindful of the fact that we are only trained assistants in the field, and that the cure is administered by the Great Physician.

How few specifics have we in medicine—quinine and atabrin for malaria, and even that does not work in every case; arsenic, bismuth, mercury, and iodides in syphilis; diphtheria antitoxin in diphtheria; and a few others that are supposed to be specifics. Without specifics, then, what is our approach in the treatment of our sick patients?

For acutely ill patients the most important single factor in their recovery, to my mind, is to maintain a normal fluid balance. This can usually be done by having nurses get in the required amount in the twenty-four hours. An intake and output chart should be kept; and if the patients are not taking enough fluids, we have glucose in different strength solutions put up in sterile containers ready for use and easily administered in the home. This has been one of the greatest therapeutic aids in treating acutely sick patients that has come to me in my general practice.

We have stimulants to use when indicated. Sedatives are more often helpful, for the average person that is sick is apprehensive and often so nervous that he is unable to get the necessary amount of rest. The mild sedative in such cases often does more for the patient than any other single factor.

There are many other things, varying in each individual case, that help in the recovery of our patients. But even after access to the methods of treatment we have today (and these are far more numerous and better than they have been in the past), we are still at a loss to correct and help restore our patients to normal health in many cases. Facing these facts as we must, it brings us to what I claim to be the most important branch of medicine, and that is prevention.

Preventive medicine has made more rapid strides in the past fifty years than in 500 years previous to this period and more than any other branch of medicine, and we should be proud of this. The day of preventive medicine is not coming—it is already here, and we as private practitioners should be the most ardent and enthusiastic supporters in this field.

There is no other man in our respective communities upon whom patients rely more than their doctor, if he is an honest, earnest, reputable

man with the proper training, and if we do not practice preventive medicine in our communities, we have no right to criticize the health authorities for doing what we are neglecting. I believe that the private practitioners should immunize their patients; but if they won't come to us, perhaps they will go to the health officers. There yet remains with many of our people a prejudice against vaccination. We must deal gently with them, for they are usually honest in their ignorance. To offend them by a curt or too positive answer often makes enemies. When this type of person asks what I would do about immunizing my children for diphtheria, I tell them that, knowing what the medical profession does about the protection toxoid or toxin antitoxin gives, should I fail to give my children this treatment and they should contract diphtheria and die, I would feel directly responsible for their death. I leave them to draw conclusions as to their own children.

In spite of our knowldege of preventive treatment, diphtheria continues to be a menace to our babies. Only this past fall in the edge of an adjoining county in which I practice, there was quite an epidemic. One morning I was called to come at once to a home in this section, that a baby was about to die. Before I entered the house I could hear the child's hard breathing. On examining his throat I could see no membrane or any evidence of diphtheria; but I saw that the child was going to die if something was not done quickly to relieve the obstruction. I had the parents take the child at once for intubation. Smear and culture showed diphtheria, and 20,000 units of antitoxin was administered. He got along fairly well until a few days later when the tube was removed, at which time he almost choked to death before the tube could be replaced. He was advised to have a tracheotomy, and this was done, but the child died of complications from this dreaded disease six weeks from the onset. Here was a child seen in less than an hour from the time the physician was first called. In less than three hours from the time of the first call for the physician, the child was intubated and antitoxin administered. Yet the child died! We are happy to say that such instances are now rare compared with twenty-five years ago. But they should not occur at all, and I believe the day is not far distant when they will not occur.

For the past two years my associate, Dr. Greene, and I have had our secretary send out cards when our babies are six months old, advising the parents to bring them in for immunizing doses for diphtheria. It is surprising how many more babies are immunized under this program. Recently we have discussed adding to these cards requests for the older children to be inoculated for typhoid and vaccinated for smallpox. Typhoid in cities has ceased to be much of a menace because of proper water supply, sewage disposal, and milk inspection; but in rural sections we continue to have from one to several cases every year. We have observed that even though we do not vaccinate some children, our suggestion makes them more likely to agree to vaccination when the health officers come around.

There has been talk from time to time that public health officers are getting into the practice of medicine. This has not been true in our county. Your chairman and our county health officer, Dr. Bulla, has at all times been most cooperative with the physicians in his section. In consultation about contagious diseases in my early practice, he was a great aid to me. He was always willing to help establish the diagnosis, leaving the family with a higher regard for their doctor.

A word of criticism, I believe, can be helpful to the public health doctor and the private practitioner alike, and I hope no one will misunderstand me. I speak in reference to your nursing staff. I feel that your nurses are trained in their field of work, but oftentimes, not realizing the effect they may have on the attitude of the family towards their physician, they make remarks that are most untimely.

Please pardon this personal experience that occurred after I had been practicing about three years. While standing before an open fire one morning a little girl received a very extensive burn, nearly two-thirds of her body surface being burned over. According to our teaching, she was due to die, with this much of the skin surface involved, however, I took care of her as best I could, opiates for shock, and keeping up her fluid balance. Having had an internship in a hospital that probably treated as many burned cases as any hospital in Philadelphia, I thought I knew something about treating burns. As the child's face was burned all over, I treated it without covering with a dressing. The child was getting along very well, considering, but at the end of the first week the face looked bad. The county nurse dropped by, and without thinking, said to the family, "Why doesn't he dress her face?" This remark got the family all upset, and I had a time explaining to them that I was following the best method. I realize that such as this is not supposed to happen, and I am sure that the public health officers regret even more than we do that occasionally they do occur.

The rest of my discussion comes under one heading—prenatal care, postnatal care, and pediatrics—because, from a general practitioner's viewpoint, they are so interwoven as to be discussed better together than separately.

It is the private practitioner that delivers the majority of the babies, the citizens of tomorrow. This, I think, is as it should be, and I am sure will continue to be if we private practitioners prepare ourselves as we should and then do our work as well as we are qualified. What I have to say is not meant for the specialist in obstetrics; he has been giving his patients prenatal care all along. But the specialists' patients are only a small per cent of the whole. We who deliver the majority of babies must see, so far as it is in our power, that babies are given their rights and the mothers proper prenatal care. Let us rehearse some of the rights of the child:

1. Right to be born.
2. Right to be born after being conceived.

3. Right to be born of healthy parents.
4. Right to have a mother who has had prenatal and postnatal care.
5. Right to his own mother's milk.
6. Right to be protected from disease and to have his physical defects corrected.
7. Right to the best education the State can afford.

Discussion of several of these rights does not fall within the limits of this paper.

The child has a right to be born of healthy parents. We cannot always make the mother healthy when we get her, but we can do much to help her condition. I feel that it is up to us as general practitioners to be more diligent in our prenatal care. Every pregnant woman should be examined from the very beginning of her pregnancy. She should select her doctor at once, and if he is not willing to take the responsibility, he should tell her and refer her to another doctor. If we do accept her as our patient, on the first visit we should get a blood Wassermann and hemoglobin. Forty-five dollars spent for a Dare hemoglobinometer will be money well spent. It is surprising how many mothers show a rather marked degree of secondary anemia. It is also surprising how little you can build up their hemoglobin during their pregnancy; but if given iron while they are pregnant, their postnatal period is far more satisfactory and their return to normal is much more rapid.

It is not enough to take the blood pressure, test the urine, and examine the hearts of these mothers. We should go into their diet and instruct them as to their requirements, making them realize that this is the most important period for them and their babies, and that our goal is to have them in just as good condition after they have had their babies as we found them—better when possible. Pelvimetry should be done in all primiparas, and in multiparas that have had difficult labors and abnormal cases hospitalized.

No pregnant woman should have her teeth go bad, knowing what we do to prevent this condition. We should feel responsible if this happens, provided, of course, she has cooperated with us. The development of the baby's teeth begins at the thirteenth week of pregnancy, and fortunate it is for mother and baby that it doesn't start earlier. Lucky is the woman who is not nauseated during her first trimester and is thus unable to maintain her normal requirements in this period. From this period on nausea is usually less. It should be seen to that she gets enough milk, fresh, green leafy vegetables, fresh fruits, a moderate amount of fresh meat unless some definite indication arises to cut it down, and sunshine or artificial ultra violet ray, viosterol in some cases. When milk is not available or tolerated dicalcium phosphate ℥ 1 t. d. has been of great help..

If the general practitioner is to do the most for our babies, it must begin before they fall into the hands of pediatricians and the same applies to pediatricians treating children that applies to the obstetricians treating mothers—only a small percent of children are ever treated by these

specialists. We should be amply able to take care of ninety-five per cent of our pediatric problems, if we put forth some special effort in this field.

Just here, let me egress from my paper and recommend to your group that you recommend to the practitioners in your respective sections that they spend two weeks at the Pediatric Seminary in Saluda which usually meets the last week in July and the first week in August. This course, conducted by pediatric professors from nine different medical colleges throughout the South and many other successful practitioners, gives more practical, worthwhile teaching in pediatric problems than all the training the average private practitioners had in medical college and the average hospital in interneship. In addition to the valuable training he gets, there is a most delightful vacation in the mountains of Western North Carolina.

Much has been written and said for prenatal care, and justly so. But I feel that we should stress postnatal care a great deal more than we have for the postnatal condition of the mother will have much to do with how she cares for her child. Much of the morbidity in motherhood may be traced to lack of proper postnatal care, and we should give more thought to this period than we have.

We should make more rapid strides in the control and eradication of communicable disease than we have in the past. Proven scientific methods are at our command, and we as private practitioners should work hand in hand with our health officers in carrying out our programs if we are to accomplish what the public is expecting of us—and more is expected today of a physician than that he diagnose, treat, and report diseases. He is, or should be the guardian of the family's health.

Chairman Bulla: This paper will be discussed by Dr. Henderson Irvin.

Dr. Henderson Irvin (Eureka): I first want to thank Dr. Goodwin for this very timely, very interesting, and very good paper that he has prepared.

I am not going to try to discuss it from the standpoint of the treatment that he has given you. I want to just bring a few ideas, give you a few thoughts, that you might take back with you, think over, and digest for yourselves.

I think Dr. Goodwin is quite right in first making the point that a physician to do his part must have the qualities of a straight, honest man. You know when we start to practice medicine, when we pick out a location, when we go to do our bit, a great many of the members of the medical profession, I am sorry to say, forget the obligation that they owe to society.

We want this place that we have picked out to be a better place in which we are to live. We want it to be a better place in which we are going to put our wives to live. We want it to be a better place to raise our children, if we have children. The only way that we can do that is to exert

our every effort to put forth our energies to that end. The way to do that is first to realize that our duty is to our profession and to our communities.

The way to get at this thing is to put each individual in your own position. When a patient comes to you, you must realize that if that be a woman you are going to give her the same careful examination, the same careful treatment, that you would if she were your own wife, or your own mother; if it be a man, the same that you would give your father or brother. If you will go by that, you won't go wrong in treating your patients.

The thing you have to remember is that a physician is going to be not only the doctor, not only the one they take their aches, their pains, their miseries, their sighs, and their ill-feelings, their lassitude, and so on to, but they are coming to you with every trouble, every problem. Of course, it depends upon the location in which you are. A man who is in a city is not going to have the same advice to give as the man in a smaller place, in the smaller towns, in the country, the man who is going to do community work, probably.

But you must know that you are going to have the love affairs brought to you, the family fight, the community disturbances, the school trouble, the church row, and everything else.

The thing to do is to first make up your mind not to make up your mind for either side until you have heard both sides, and then be perfectly honest by putting yourself in those complainers' shoes.

It makes no difference whether one side or the other happens to be a friend of yours, you cannot afford to lean in either direction. You must be honest, because that is going to fall back on you sooner or later. You may have the same thing to repeat, and then they will point their finger at you.

The next thing you have to do is to remember that you have to cooperate with those boards that are going to be around you. Personally, I feel that no board ought to exist without one member of that board being a practicing physician. Whether it be your Board of Aldermen, your Board of County Commissioners, your School Board, your Board of Education, there should be a practicing physician on that board, in order that he might help to direct the destiny of this work.

You will pardon me for giving you a few personal experiences. I have been on the Board of Health of Wayne County for nineteen years. I have been on the School Board for eighteen years, and the rule I make is this: Never miss a Board of Health meeting when it is possible for me to get there. When I don't show up at that Board of Health meeting, the Secretary knows that something has happened to make it unavoidable.

The same with the School Board. I see that I go into that school building each and every day that school building is open, for the entire eight months. I go into the diet kitchen one time. I go into the home economics room another time. I go into the Superintendent's room. I sit in the primary grade. But when the end of the year came, the Chairman of the School

Commission of the State of North Carolina told me that I knew more about the work of the entire county than any school committeeman that had ever served before.

I take those opportunities to compare the work of my school with the others, and I give one hour each week to the white and colored schools of my town on health problems. I give health talks, and we have these same talks at the Teachers' Associations in this community.

If the physician will remember that he has to be something besides just a doctor, that he is going to throw some spirit, some pep, some interest into things that are going on around him, he will find time to do it, and by his efforts the community will be better off.

The thing that is thrown at me a great many times is that we don't have time to do these things. You tell us that, and we feel that is probably right, that we don't have time to do them, but if you will systematize your work you can find time. It is just what you make it, and if you will systematize your work, you will have plenty of time to serve in the community in different ways. A great many times I get small boys when I see the things going wrong. I take those smaller boys out of the school and take them to my office and I give them a talk, just as though they were my own sons. I have frequently had to take some of the girls and do the same thing. When I see things going wrong, I take it upon myself to take care of them.

I was going down the road one day behind one of my trucks, of which we operate seven, and I saw a scrap going on. I ran around in front and waved to the truck driver and made him stop and found out just exactly what the trouble was. I took these two boys off that truck and gave them a good switching and then beat them home to tell their parents what I had done before the boys could go home and tell them. They okehed me.

In closing, I want to thank Dr. Goodwin for his paper and say that I think there is no place on earth, the ministry not excepted, where there is opportunity to do the greatest service for the most people, than there is in the general practice of medicine. (Applause)

Chairman Bulla: These two speakers are physicians who practice medicine in small towns. They know their problems, and we are glad to have the paper of Dr. Goodwin and the discussion of Dr. Irvin.

The paper is now open for general discussion, and I would like to ask those who wish to discuss this paper to come to the front, if you please.

Dr. S. B. McPheeters (Goldsboro): I do not wish to discuss the paper, I simply want to discuss a man.

I want to say that Dr. Henderson Irvin does what he has just been telling you about, and does more than he has been telling you about.

I would like to say that if the spirit that animates him, animated the profession at large, the problem of social medicine would not be so menacing. (Applause)

CHAIRMAN BULLA: Is there any further discussion? As I announced in the beginning, our program is short and we have ample time for discussion.

DR. D. S. MCGEACHY (Weldon): Dr. Bulla, we have just completed in our county a pre-school clinic, and I was honestly surprised to find how many children had grown up to be five or six years old without ever having been vaccinated, children of some of the leading families in our county. At the last Medical Society meeting I just got up and told them that it ought not to be so.

It just happened that that afternoon we were in a principal section of our county and I vaccinated twenty-five or thirty children that should every one have been vaccinated by the general practitioner, and I told them that. I said, "I don't want that to happen again. I want you to vaccinate them. You know just as well as I do they should be vaccinated and you know they have to be vaccinated before they go to school. The parents can't help but let you because they have to be vaccinated anyway." The doctors are agreeing to do it.

I have been waiting for somebody to say something about this: I am a firm believer in vaccination for whooping cough. I don't tell my patients that it will prevent it, but after sixteen or seventeen years of observation, I am thoroughly convinced that it is an excellent procedure, and I advise them to take it.

I tell them to take the diphtheria treatment as soon as they are six months old, and as soon as possible, within a few weeks, to take the three doses of whooping cough serum, and I give them large doses. We give two cc.'s at each dose. Some give one, two and three; one first and then two cc.'s and then three. We give two at each dose and if it is carried out properly the whooping cough serum will certainly make the disease lighter. I have been using it for seventeen years. The serum is sent out by the State Laboratory free of charge.

CHAIRMAN BULLA: Is there any further discussion?

DR. C. C. HUDSON (Greensboro): Both the speakers in this program gave us an excellent presentation of what the general practitioner can and should do. They also gave us one of the best conceptions, one of the best incentives toward health work, that I have ever had the pleasure of listening to. In fact, I have never listened to any paper which showed a broader appreciation of our real problems in the health field than the paper and the discussion of these two previous speakers. If every general practitioner had the same attitude which they have, we can say that our work would be much easier than it is at the present time.

One thing though: You notice they say they can do certain things to help us. Sometimes we don't pause and think what we can do also. The question of those children Dr. McGeachy tells about growing up to six years of age without being vaccinated: The Health Office should have the birth certificates of every one of those children. At the sixth or eighth

month we send those children a letter telling them they should go to their physician and be inoculated for diphtheria. Our nurses are visiting a good many of those homes and they instruct those people to take it. In all our news items that we give out we say, "Take your children to your physician and have them inoculated."

We keep the Health Office open, and give the vaccine on Saturday morning. We have been keeping that up for several years now. Last year we had four cases in Greensboro, in our city population. We had four others brought in from outside, but we had only four cases of our own.

We are not having to inoculate anything like as many children at the Health Office as we were when we first started. In other words, we are gradually training those parents to have their children inoculated when they are six to twelve months old. No child should reach his first birthday without being inoculated against diphtheria.

In the pre-school roundups, the first thing that we do in connection with them is to send a blank to the parents, and we ask them to take those blanks to their physicians to have them filled out. We send a very urgent letter along with the blank, telling them to do this. We advise them in our publicity and everything else to take those blanks to the physician, that he can give them more time than we can possibly give them in a clinic. We, of course, have certain sections of the city where we must do the work, because the parents will not go to their physicians, as Dr. Goodwin has told you in his paper.

Much of this work that we are having to do we would like to be rid of, but we can get rid of it only by a long process of education and possibly other measures.

Along the line of communicable diseases, there is one more thing we are doing that makes a tremendous amount of work for physicians—that is, on measles work. In 1928 we had a severe measles outbreak. During that outbreak we began preparing serum in our local laboratory for the use of physicians. Through the nurses we attempted to have a physician see and treat every case of measles in the home—every first case especially—and in that way put them in contact with those families.

The nurses visiting the homes for quarantine took note of whether or not there were any little children there who did not have the disease, and in all cases they attempted to get those children under the care of physicians, if they could not get a physician see the first case.

Through the use of this immunization serum we have been able since 1928 to practically cut out our deaths of measles cases in the homes, in children under four years of age. We have had two deaths from measles in two outbreaks since that time in adults, showing that we had rather a virulent type of it, and we had one death in an older child, a child past the age in which we are using the serum.

We believe that there is a tremendous field there for work. We believe

that the whooping cough vaccine will also afford a future field that should be utilized by the general practitioner when the baby is just a few months old, possibly before it is given the diphtheria toxoid.

We realize that what the speakers said about nurses is entirely true. We also realize that sometimes we get criticisms which are not deserved. For instance, for quite a while we tried in certain areas in the city to push all children to physicians for immunization against diphtheria for a long time before we finally decided to go ahead and do it and get rid of the disease.

During that time we kept a record of the cases of membranous croup, and one day I met one of the physicians on the street and he said, "Why in the hell don't you go out and immunize those children against diphtheria so I won't have to be getting up at night and intubating them?"

We decided to try and push every one we could to the physicians, and where we couldn't get them to go to a private physician to go ahead and get them immunized as fast as we could. I believe that that spirit of cooperation is the spirit which should prevail over our preventive medicine practice. We must have that spirit for years to come if we are to get anywhere, and I was delighted to hear both these papers, which are quite welcome.

Chairman Bulla: Is there any further discussion? If not, I will ask Dr. Goodwin to close.

Dr. Goodwin: I wish to thank these gentlemen for their discussions. However, they didn't score me as much as I was afraid I would get scored.

I appreciate Dr. Irvin's remarks. I know from what he said that he is in a position from which he is not going to move out any time soon. I have been moving from Apex for seven years. Every time I have gone away to study pediatrics for a week or two, every time I have gone back to my old school for a week or two to brush up in obstetrics and gynecology, there is a report that is out when I come back that I am leaving for somewhere else. I am not leaving, and I am sure of one thing, he is not leaving either, because with all our problems that we have to deal with, all of the unpleasant things that come to us, plenty of kicks—we have to learn to take it on the chin early, or something will happen to us—there is something that we get out of the practice of medicine in working with people that many of you people in public health work do not get, and we are not going into public health work and we are not going to leave the towns we are in.

Dr. McGeachy, I believe it was, discussed something about vaccines. As far as whooping cough vaccine is concerned, I have given a great deal of it. I was sold on it for a while. I thought it was really worthwhile. Then all of a sudden there came a severe epidemic along and hit me in the face, and it looked like nothing would do any good.

I have given whooping cough serum, I suppose, more than any man in the county, that is, in general practice. I think it does good in certain

cases. I think it maybe does good in all cases. But if it does good, I think Dr. McGeachy hit the nail on the head when he said it must be given early, and, I think, in much larger doses than is often advocated.

As to Sauer's vaccine, it sounds to me like it should be better. I haven't had enough experience with it to compare my results and to know just how much benefit it is. I recall one time one of my old teachers saying, "Woe be unto that man who ever reports one case of anything." I have had more than one, but I haven't had enough to make a report on.

Frankly, for the general practitioner who is treating whooping cough when he has babies that have been exposed to it, the best thing I have had—and this has been fairly constant, not absolute—has been convalescent serum in those children who are young. If you can, find a good, healthy child who has recently had it within the last six to nine weeks, and get enough blood to do a Wasserman test before you give that serum to another child. That is one thing I have always stuck to and I expect to stick to it.

This, to my mind, has been the most positive help of anything that I have had, and I can say also in measles, if I can get convalescent serum from some child who has recently had measles and give it to those children who have been exposed anywhere from the second to the fifth day, I can get a very much attenuated case of measles and oftentimes prevent it in the very first day of their exposure.

I think, as far as my own practical experience goes, these are the two most helpful things in the treatment of measles and whooping cough, when you can get the serum.

I appreciate very much Dr. Hudson's remarks and the other gentlemen who discussed my paper. (Applause)

Chairman Bulla: The next paper, "Syphilis and Gonorrhea as Public Health Problems," by Dr. David M. Davis, Professor of Genito-Urinary Surgery, Jefferson Medical College, Philadelphia, Pennsylvania.

. . . Dr. Davis presented his prepared paper. . . (Applause)

SYPHILIS AND GONORRHEA AS PUBLIC HEALTH PROBLEMS

By David M. Davis, M.D.

Professor of Genito-Urinary Surgery, Jefferson Medical College, Philadelphia

Syphilis and gonorrhea have always been public health problems. We know that venereal diseases have had the attention of the authorities, at least as far back as the time of Moses. Until very recently, nothing could be done about them except to formulate regulations designed to prevent the spread of infection. With the growth of cities and of industrial civilization, the enforcement of such regulations became exceedingly difficult. None the less, efforts in that direction continued, and in modern times

have taken two general directions; the first, to license and regulate prostitution and provide medical examinations and treatment for prostitutes, and the second, to prohibit prostitution and to make every effort to suppress it. It is needless for me to remind you of the complete failure of both of these plans. Twenty-five or more years ago, Abraham Flexner showed that regulation and medical supervision of prostitutes are impracticable and doomed to failure. The suppression of prostitution has never succeeded; dishonest politics and graft always oppose it bitterly, and the changes in our mode of life, largely resulting from the widespread use of the automobile, have made it a feeble weapon at best.

At this time, there is a powerful and dramatic revival of interest in the war against venereal disease. New methods have been developed and tested, and, thanks to the initiative of Surgeon General Parran of the United States Public Health Service, the matter has been taken to the people. The tabus and repressions of centuries have been dissipated almost at one blow. Through the press and over the radio have gone the forbidden words "syphilis" and "gonorrhea," and we may hope that before long the school and the pulpit will take up the good work. The people are demanding knowledge, and the medical profession must supply it. This means that we, as doctors, must study the problems involved, so that our advice may be good.

Syphilis and gonorrhea being the most important diseases, we may focus our attention upon them, and I shall today discuss for the most part the fundamental differences between them as public health problems.

Syphilis is a disease for which we have a specific treatment, which is in many instances curative, and which in practically all instances has the power to render the patient non-infectious in a few days, and so make him no longer a menace to his fellow-citizens. This immediately provides us with a highly suitable method. If we can see to it that each case is treated early, we can soon reduce syphilis almost to the vanishing point, even if we do nothing to prevent or control sexual exposure. The way has been clearly shown in Denmark, where an active campaign has been highly successful in reducing the incidence of syphilis. In such a campaign, there are six elements, none of which may be neglected.

The first is public education, through newspapers, magazines, pamphlets, radio, and the schools. The object of education is to enable some to avoid infection, through continence or the use of preventive measures, and to induce others already infected to seek proper treatment at once.

The second element is the provision of free diagnostic laboratory service for all physicians and clinics treating syphilis.

The third element is the provision of free medicines—arsenicals, bismuth and mercury, so that no one may lack treatment for financial reasons. Some feel that free laboratory service and medicines should be available only to those unable to pay, while others think that they should be free to all, in order to avoid the difficulties and delays arising in borderline cases,

and also to enlist more effectively the cooperation of the medical profession. I would not attempt to say which is the better plan, but it is clear that since syphilis is no respecter of persons, the campaign against it must permit of no exceptions to the rule of treatment for all if it is to be effective. Certainly, it would seem that the cost to the community of laboratory service and medicines would be repaid many times over if it could be freed from the institutional care of the large number of cases of advanced syphilitic disease, particularly tabes dorsalis and dementia paralytica.

The fourth element is the provision of free treatment centers or clinics for patients unable to pay a physician. These centers must be numerous and well distributed, but there is no reason why existing dispensaries, out-patient departments, public health clinics and other medical establishments could not be used for the purpose.*

The fifth element is the provision of workers to find and bring for examination and, if necessary, treatment the contacts of syphilitics—namely wives, husbands, children, housemates; and also to keep follow-up files to insure that all patients continue under treatment a sufficient length of time.

The sixth element is the use of the police power of the local government in the cases of recalcitrant individuals to assure that their treatment is properly carried out. Certainly no one has any more right to disseminate syphilis in the population than he has to spread smallpox or leprosy.

To carry out such a campaign, complete in all its details, would seem to be a herculean task, and indeed it would be, but it would certainly be worth the trouble because the results of a successful campaign would be of the most incalculable value to civilization. At any rate, the way is clear; we know exactly what we have to do to conquer syphilis. The problem is no longer in the laboratory, but in legislative halls and public health offices. And the decisions finally made will be determined by public opinion.

Not so with gonorrhea. There is no treatment for gonorrhea which will quickly destroy its infectiousness. It would be foolish to spend huge sums to drag people to treatment clinics which would leave them just as capable as before of infecting all and sundry. Gonorrhea can be attacked, but it is necessary for us to study the facts carefully, and not to waste our efforts on ineffecutal measures.

What are the facts about gonorrhea? It seems to me that the following seven points are the most significant:

First. There is no rapidly curative treatment for gonorrhea.

Second. Much of the treatment given for gonorrhea is incorrect, ineffective and insufficient. This includes also the so-called "drug-store treatment" which is a crying scandal of our times.

Third. Many cases of gonorrhea receive no treatment at all.

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* Davis, D. M.: A Campaign Against Venereal Disease in the Army of Occupation; Jour. Amer. Med. Asso., Jan. 24, 1920, Vol. 74, 223-226.

Fourth. Gonorrhea patients are infectious during much of the period of treatment and may remain infectious for an indefinite period if the treatment is insufficient or lacking.

Fifth. Patients may harbor gonococci and be infectious when there are no subjective or objective manifestations of disease. For this reason, the diagnosis is often missed, even by a reasonably careful physician.

Sixth. It is possible for the body to develop a sort of immunity to its own gonococci or to the gonococci of an habitual partner. Such partners may cohabit without harm to either, yet be able to infect any outsider.

Seventh. It is quite possible for the vagina of a prostitute to act as a reservoir for gonococcal pus deposited there, so that she can pass the infection to many others without even becoming infected herself.

Such, then, is the factual background against which a plan for the attack on gonorrhea must be constructed. This collection of facts offers a ready explanation of why the medical supervision of prostitutes has been a complete fizzle. It also shows clearly why the battle against gonorrhea is going to be a much harder one than that against syphilis, and why we cannot even hope to eradicate gonorrhea completely until some really effective treatment is discovered.

I would like to offer from my own experience the story of a very comprehensive and energetic effort to combat venereal disease under particularly favorable conditions. I was attached as Division Urologist to the Third Regular Army Division of the United States forces which occupied the Rhineland after the Armistice in 1918. This division held an area approximately 15 to 20 miles in diameter with a population of from 50,000 to 80,000 people. The inhabitants all lived in rural communities except about 20,000 in the two principal towns. There were about 28,000 men in the division. The plan included the following items: First, frequent instruction of the soldiers as to the dangers of venereal disease and of the necessity of prophylactic treatment if exposure occurred. Second, establishment of numerous and well-conducted prophylactic stations. Third, bi-weekly physical examinations of all soldiers to detect cases of venereal disease. Fourth, prohibition of all fraternization with the civilian population. Fifth, prohibition of the sale of liquor except between 5 and 7 p. m. o'clock. Sixth, closing of all known houses of prostitution. Seventh, hospitalization, without pass privileges, of all soldiers with venereal disease until pronounced cured or non-infectious. Eighth, thorough investigation of each case of venereal disease with discovery of its source, if possible. Ninth, arrest and confinement, in a civilian hospital, of all prostitutes or other women known to have venereal disease, until such time as they were pronounced cured. It will be seen that this plan contemplated a real quarantine of every case of venereal disease we could discover.

During a period of 15 weeks, the venereal disease rate for cases contracted in the occupied area averaged 5.56 per thousand per year—a very excellent figure. On the other hand, in spite of all these strenuous efforts,

we were unable to locate the source of the infection in nearly 50 percent of the cases.* Thus, about one-half of the women involved remained at large and presumably continued to spread disease.

Many of the elements in this plan would be utterly impossible to carry out in our own country in peace time, and even if they could be, the cost would be prohibitive. Which ones, therefore, of these elements can be used at the present time? It seems very clear to me that the only one which is universally applicable is that of public instruction, leading to a wide diffusion of popular knowledge about the venereal diseases, and particularly about gonorrhea. We have learned that force is useless, so we must fall back on persuasion, and try to develop it to a new high point of effectiveness. To reap the benefits of this education of the people, there must be available numerous and convenient treatment centers for those who have learned to want to be cured, and prophylactic stations for those who wish to be protected from the consequences of their indiscretions.

The new freedom of speech concerning venereal diseases opens the way for this long-needed campaign of education. The enthusiasm of editors and radio executives for the campaign is surprising and heartening. It presents the medical profession with a responsibility and an opportunity.*

Since popular education must be our principal weapon against gonorrhea, we must take serious thought as to how it should best be managed. The flow of instructive material through all channels must be copious and sustained. The subject must be harped upon persistently for years until it becomes a routine part of daily life like the campaign against tuberculosis. Yet every variation must be played, every trick of the professional publicist utilized, to avoid monotony and boredom. Printed pamphlets, skillfully written for people of different ages, must be easily procurable by individuals for themselves, by parents for their children, by teachers for their students, by all leaders of youth for those whom they influence. Hygiene is taught in the schools, and surely the hygiene of venereal diseases is important enough to deserve a place alongside that of typhoid fever, diphtheria and tuberculosis. The radio and the motion picture will play their important parts. I foresee a time not far distant when the high school students will be amazed at being told that we were once so secretive about venereal disease. I am very glad to believe that in a few years the young people will be armed with the knowledge which will enable them to protect themselves against venereal disease. When that time comes, every one of us in the medical profession must be ready to help them with sound advice, with skillful treatment when they need it, and with the ability to determine when the afflicted ones are really and permanently cured, so that they can resume their proper places in society.

It is unfortunately true that many doctors at present treat venereal diseases very badly, and carelessly discharge their patients as soon as

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external manifestations disappear. The American Neisserian Medical Society, formed only a few years ago, has undertaken a very important work in connection with the treatment side of gonorrhea. There is at present the greatest conflict of opinion as to the best methods of treating gonorrhea, and as to the manner of determining when the disease is cured. This Society, through its committees, has gathered hundreds of opinions from physicians in all parts of the country, and is engaged in sorting and codifying this data into a standardized method of treatment which represents the best and the safest. Any physician may obtain a copy of this report when issued by writing to the secretary, Dr. Oscar F. Cox, Jr., 118 Bay State Road, Boston, Mass. Similar information concerning the treatment of syphilis may be procured from the United States Public Health Service, Washington, D. C.

Let us then, gentlemen, at the very least, drag venereal disease out of the festering obscurity from which it has preyed on humanity for centuries. Perhaps when it is exposed to the full light of day we may discover other and better ways of overcoming it.

Chairman Bulla: This most interesting paper is to be discussed by Dr. Hamilton McKay.

Dr. Hamilton McKay (Charlotte): Mr. President, Ladies and Gentlemen: I have a medical friend, who is an editor, who says it is very poor taste to ever say anything complimentary about the speaker when one opens the discussion. Unfortunately, I do not share this friend's views, and I want to say briefly to this audience, for those of you who are not familiar with the speaker, by his own accomplishments, you have just listened to one of the country's great urologists.

Dr. Davis has done precisely what we who know him expected him to do. He has covered this rather difficult subject thoroughly, making many helpful suggestions, yet his paper has been amazingly and refreshingly brief.

In discussing the subject, I wish to make certain observations, which, within the time allowed, the essayist could not do.

First, the manner in which the public has welcomed the campaign against venereal disease makes the physicians pause and wonder why the profession has not had sufficient courage to attack this problem long before, like it has attacked yellow fever, TB, cancer and other diseases which have been the arch enemy to humanity. Almost every layman now uses the terms, both gonorrhea and syphilis, without embarrassment. This alone presents a challenge to the doctors of this country that is filled with great responsibility and wonderful opportunity.

In the discussion of syphilis, Dr. Davis mentions free laboratory service. I would emphasize the necessary educational program to the doctor—first the dark field examination and the delayed dark-field technique for all penile lesions and suspicious lesions elsewhere. It is a lamentable fact that

too many doctors treat lesions of the genitalia without proper laboratory examinations.

The third observation: I believe a committee should be appointed from the State Medical Society to confer and cooperate with the United State Public Health Service, the State Department of Health, and the State Department of Education.

I am thoroughly convinced that the time is not far distant when elementary anatomy and physiology of the sex organs should be taught in the public schools and that hygiene of the venereal diseases should be included in this course. This committee of the State Medical Society should organize similar committees in every county society in the state and first cooperate with the county health department, educate its own membership, and furnish the desired information necessary for schools and the public at large.

I agree with Dr. Davis that the doctors at present treat venereal diseases badly, probably because they were badly taught in medical school concerning diagnosis and pathology.

I think this campaign also offers a challenge to all of our medical schools of America to place the proper emphasis on the necessity for thorough teaching of venerology.

In closing, Mr. Chairman, if I may diverge for a minute, in this rapidly changing era in medicine I think that the medical profession makes two great mistakes. In the first place, we fail to realize that when we graduate in medicine we are supposed to be educated citizens. As such, we owe or should make a distinct contribution to every community in which we are located.

The second thing: The medical profession, so far especially in campaigns like the one that is being discussed, has failed to furnish the necessary thoughtful, constructive, aggressive leadership, and we find ourselves many times in the hands of the politician and the layman. The layman is continually writing in all of our current publications on subjects on which the medical profession should furnish the necessary thoughtful, aggressive leadership.

So I hope that this Section of the Medical Society of North Carolina will not listen to a constructive paper like the one of Dr. Davis and go home without making the necessary recommendations.

The machinery that I have outlined of a committee from the State Society cooperating with all agencies and subsequently organizing every medical society in the state to cooperate in a similar way may not be the proper machinery. I think that makes little difference, but I am sure that the thought is constructive. Thank you very much. (Applause)

CHAIRMAN BULLA: Dr. McKay, I am going to ask the incoming Chairman to appoint such a committee.

Is there any further discussion?

Dr. Carl V. Reynolds (Raleigh): I feel since a syphilitic program is now just about to be started in a big way in North Carolina, that I should rise to make a few remarks to Dr. McKay.

Dr. Davis certainly has shown to us a definite, clear picture that we have a real problem confronting us. To emphasize that statement, you may be familiar with this statement: I would like to call to your attention the fact that has been demonstrated, and I think Dr. Davis will bear me out, that out of the 127,000,000 people in the United States, about twelve million people are infected with syphilis. About ten per cent of the children born are born from syphilitic mothers. About five per cent certainly go on, through neglect of the early treatment, to be inmates of our institutions.

So we certainly have a problem with those figures staring us in the face, and I think they are indisputable. What are we going to do about it? Years and years ago they tried segregation legislation, and failed. So there is only one means of attack and that is through education and early treatment, and continuous treatment, treating syphilis as an infectious disease, a communicable disease, making syphilis, and gonorrhea, if you please, a byword, the same as you would typhoid fever, or small-pox, or any of the other of those infectious diseases. In that way we can tackle it intelligently and, furthermore, to my mind, with a great deal of effect.

We must get away from the idea of treating syphilis until the symptoms are relieved. The medical profession doesn't believe and admit that the vast majority of the cases today are under-treated. Heretofore, they gave them four, five, or eight shots, and dismissed them.

I think the consensus of opinion, Dr. Davis, is that they should have continuous treatment for eighteen months with observation for five years, and after the five years' period, there is very little chance of that syphilitic infecting others. But certainly there is up to that time.

Another very important point that strikes me in the management of syphilis is that we should treat the patient and not the Wassermann test. I have forgotten the authority—some outstanding authority—who quotes the Wassermann test with undertreated patients as ten per cent negative, twenty-three per cent Wassermann fast, and sixty-seven per cent paradoxical. If that is true, certainly, then we have to treat the patient and not depend upon our Wasserman test.

As far as the committee is concerned, Dr. McKay, the Territorial Health Office has had such a committee. They have definite plans. The State of North Carolina Board of Health has had such a committee. They have definite plans cooperating with the Territorial office and they have had a committee appointed, a committee of three appointed by the President of the State Medical Society of North Carolina, who sat with Dr. Knox, Epidemiologist of the State of North Carolina, and the State Board of Health. That committee has a composite picture of the plan, which will be presented tomorrow at 11:00 o'clock. (Applause)

CHAIRMAN BULLA: Is there any further discussion?

DR. JOHN W. WILLIAMS (Asheville): I would like to ask a question of Dr. Davis. All my life in regard to syphilis I have been told that old bugaboo—had it thrown at me—that "I have had my six doses and I am cured." I believe there is another bugaboo starting that is going to hamper us in our work, and that is case finding. It is an economic problem to a certain extent.

You spoke of having, as regards syphilis, a remedy that would easily and quickly render your patient non-infectious. When is a syphilitic non-infectious? Now here is a bugaboo. We hear some lecturers say, "We found syphilis in your food handlers, and we didn't examine them because they were food handlers, not that we thought they were going to give any syphilis that way—it was simply case finding." But they were advised in some instances to lay the man or the woman off for two weeks. Other specialists say four weeks.

I believe each case is a case unto itself for the man in charge to render his own opinion, but is there some average that we can hit on that will relieve this economic situation that we are going to run into? They are laying them off by hundreds in Asheville today and they run into the Welfare Department hunting for food until we tell them that they are non-infectious and they can go back to work. I want to know if there is an average that we can name in regard to infectious periods.

DR. DAVIS: Syphilis?

DR. WILLIAMS: Yes, syphilis.

CHAIRMAN BULLA: Is there any further discussion?

DR. JOSEPH A. MORRIS (Oxford): The difficulty in discussing it begins in the credulity or incredulity of the medical profession. That is, as I see it around me, as I talk to our doctors, I find that none of them believe in that ten per cent of the population being infected. Until they can be convinced that it is true they are not going to make the effort necessary to solve this problem for us. It seems that it is useless to reason thus with the average doctor. It seems to be the case in my county. If you talk to him he will say that he does not have anything like the proportion of ten per cent in his part of the practice.

Ask him if he has ever treated any. "Yes," he will say.

"How many?"

"Well, I don't know, probably twenty or twenty-five cases," he will say.

"Did you cure them?"

"Well, the symptoms were gone and they haven't had any since," indicating that they are not studying today with those great clinicians. Because the patient is zero negative doesn't mean that he can't communicate it to somebody else, doesn't mean that he is cured.

If any man will read the literature as issued from that committee appointed by the United States Public Health Service, one of their statements is that you can't tell when a woman no longer will communicate it. You can't tell when a man no longer will communicate it. He may be zero negative, he may have no mucous membrane or skin lesions and still can transmit it. With such things as that before you, and the doctors don't believe it, it is a problem, sure enough.

When he tells you that he has treated twenty-five he forgets that syphilis is not like measles. Measles comes and goes—it is gone. It can do no more harm. There is an immunity established that will leave nothing else to be desired in that case unless it is a very exceptional thing.

But syphilis enters into an agreement with the human being to live with him, symbiosis, and he lives there. Nothing in the world can keep him sterile from the transmission but those arsenicals or something like that. And you will say, "Well, I guess it is in the tertiary stage. He doesn't transmit it there." Who can hold him to the tertiary stage? Only the physician, by the continued treatment. How long? Moore says eighty doses for each of the arsenicals, and forty of one of the heavy metals. Stokes says, "Sixty-four, and I could not say that I have cured him. I tell him he has his case probably arrested. It may not trouble him, but I can't guarantee it."

The limited time that we have been treating that in our county convinces me that those relapsing cases are coming oftener than we think they do. I have been treating it for sixteen years and in that time we have had several cases that appeared to be apparently well, and have returned the third time relapsing back into what looks like secondary syphilis.

If syphilis would just go like measles. (Laughter) Add up all the cases that all the doctors have treated, though, and see what you have in the population now. You have plenty of it here because all of it has been treated symptomatically purely and is still with us, and no man knows how many of those are relapsing cases and begin to spread it again.

As to gonorrhea, I want to say that I have given up hope of curing one side of the house of gonorrhea. If any man will cure a woman and take the means of finding out that he certainly has cured her, he will take a smear and send it—maybe two smears, may be three smears. It isn't worth a copper, because up in the cervix, there are glands that go up there. Those gonocicci get into those glands and they stay there, and you can't get them out unless you destroy that cervix.

There is that much of symbiosis in the gonococci, too, and whenever we get that condition we are up against a problem, sure enough. We just beseech every doctor in our county to study these things in the light of the problem before us and help, and not throw cold water on this thing as a sort of over-enthusiasm.

Chairman Bulla: Is there any further discussion? If not, I am going to ask Dr. Davis to close.

Dr. Davis: A number of points have been brought up here which get more into the technical details of the treatment and natural history of syphilis, which I personally avoided in my paper.

As to Dr. Williams' question as to when is a syphilitic food handler non-infectious, I scarcely know how to answer that question. Dr. Morris has brought out the fact that relapses may occur in infectious conditions, and indeed they may.

Personally, I have always felt that the examination of food handlers in regard to venereal diseases was largely a waste of time and energy, because I doubt very much if any venereal disease is transmitted by food handlers through their handling of food. Certainly the emphasis should be placed on gastro-intestinal and respiratory diseases.

I will not answer the question as to a definite period. I should think that it would depend more upon the examination of the patient as to whether or not any open lesions containing spirochetes are present. If they are not, the patient is for the moment non-infectious, and the only thing we require of him is to continue with suitable treatment.

Certainly Dr. Morris has put his finger on some very tragic and important facts about gonorrhea. From a purely public health point of view, of course, we have to slide over a good many of these things and take merely what is true of the great majority. We can pronounce a woman cured, but that does not necessarily mean that she is cured. We will make more mistakes in so doing in cases of women than we will in cases of men, provided we can carry out the examinations with equal thoroughness and care.

It is possible that better methods will be found of eradicating the disease completely from women and of determining whether or not the disease is eradicated. At present they are not altogether satisfactory, and I must refer the more detailed answer of those questions to my friends, the gynecologists.

Thank you. (Applause)

Chairman Bulla: The next and last paper on the program, "Experimental Approaches Under Way Toward More Efficient Public Health Administration," by Dr. John Ferrell, Director of Public Health Division of the Rockefeller Foundation for the United States, New York City.

Dr. John A. Ferrell: I feel that I may presume on your good nature for a few introductory remarks, because, although I travel a good deal and attend quite a number of medical public health meetings, I can assure you that there is none that I enjoy more deeply and no meetings that I look forward to attending with greater satisfaction than those of the Medical Society of the State of North Carolina and of the Health Association of the State, for the most pleasant and satisfying years of my life were devoted to the work of the State Department of Health in North Carolina, and concurrently a corresponding period serving as the Secretary of this State Medical Association.

This means, of course, that those of you who were here when I was in service, and those who have come in since, are engaging in and continuing the piece of work in which I believe is nearer to me than any other that I have participated in in my many years of public health service.

This title, which, after correspondence with Dr. Bulla, I found myself possessed of, I think needs a bit of explanation. Those of you who are familiar with the so-called experimental approach think naturally of the epidemiological approach, that is, an approach in which a study is undertaken to evaluate certain factors with regard to a problem or with regard to a disease.

Usually it involves groups of individuals or animals, one a study group and the other a controlled group. I wish very much, in the field of organization of general public administration, especially administration in the field of public health, that it was feasible to reduce our studies and control to such definite terms. I have in mind in the use of the words "experimental approach" more the trial and error method, as Dr. Rosenau last night so delightfully discussed his mysterious subject of "Serendipity," and he explained that it involved the application of the observations of the trained mind, where sagacity was involved. That would apply very much to what I have in mind as the experimental approach, that is, an effort to make improvement by trial and error, and a capacity to observe those features which are sound and should be preserved and the elimination of those which are unsound and are more or less useless.

With that introduction, I might say that I started out with a very brief review of some of the developments, particularly in the South, and partly in North Carolina, but Dr. Buie last night reviewed the history of the public health development in North Carolina so well that it seems that what I have to say is right much out of place, but as it is brief and I don't exactly know where it terminates, I will burden you with a short review.

. . . Dr. Ferrell then presented his prepared paper with the following interpolations: . . .

(1) Preceding the words, "But there are other than those relating to the discovery of new knowledge," on page 3: I will not burden you with a discussion of a number of studies. It is quite obvious that studies with respect to syphilis and gonorrhea are under way. Studies with regard to yellow fever, malaria, influenza, scarlet fever, and many other diseases, are engaging the attention of research workers in this and in other countries.

(2) Preceding the words, "This principle should apply to governors, mayors, and administrators," on page 4: I heard a definition of a politician recently. Since definitions are quite in order at this meeting, as Dr. Branch and Dr. Rosenau demonstrated last night, a politician is a man who can see a great distance down the road and distinguish the difference between a hearse and a band wagon. (Laughter)

(3) Preceding the words, "Their work is inevitably slowed up," on page 4: Except, I might say, where the merit system prevails, there is

civil service and the conditions which I understand your health association is seeking to establish, namely, not only the merit system during the period of service, but a pension system for those who grow old and reach a retirement age in the public health service.

(4) Preceding the words, "These Interrelationships are mentioned here merely to emphasize what," on page 5: As Dr. Davis presented his admirable paper with regard to syphilis and gonorrhea, I felt that his illustration was even more appropriate for what I had in mind than that of tuberculosis. There is no place in the realm of organized society to which the ramification of syphilis does not reach. When we understand that at least eight to ten per cent of the inmates of all the insane hospitals of this country are there as a result of syphilis, you can understand that the potentialities of this disease extend far beyond the accepted bounds of public health. It is a problem for organized society as a whole, and there is a part of the work to be done by the organized health forces, but there are problems to be done by other branches of service, including organized medicine.

. . . Dr. Ferrell concluded the presentation of his paper. . . (Applause)

EXPERIMENTAL APPROACHES UNDER WAY TOWARD MORE EFFICIENT PUBLIC HEALTH ADMINISTRATION

By John A. Ferrell, M.D., Dr. P. H.,* New York

The developments in the public health field during the past twenty-five years have been striking. In the Southern States the movement for fulltime state health officers had just started a quarter of a century ago. Fulltime city health officers were rare and less than a half dozen counties had begun to experiment with fulltime health officers. Health departments with public health nurses and sanitary inspectors to share with the health officers in dealing with the numerous problems had not been created. The chief reliance for the training of personnel was on the school of experience. Appropriations from national, state, and local governments for health purposes were exceedingly small. Even had the imporatnce of health service been generally appreciated, the resources of government were so limited that little would have been possible. A few cities were making small appropriations to combat epidemic diseases. County expenditures for this or for other health purposes were inconsequential and the combined health appropriations of twelve southern states amounted to less than any one of them alone now devotes to its public health work.

Although growth and progress from month to month and year to year seemed very slow and there were many discouraging and disappointing developments, we can now look back and see that we have traveled a long way. For cities and counties to have a fulltime staff of health workers is

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now becoming the rule rather than the exception. Moreover, the workers and the public are coming to realize that university training as well as experience is a requisite for efficiency. The trend is toward the adoption and enforcement of qualification requirements for new personnel. These requirements are based upon training and other evidences of fitness. The merit rather than the political system in filling vacancies is in the process of development.

As a result, in part at least, of public health activities, death rates and sickness rates have fallen. Death from typhoid fever, diphtheria, and smallpox in communities with creditable health organizations has become extremely rare; the tuberculosis rate in the United States between 1914 and 1929 fell from 200 to 76; and in many other directions by the application of knowledge by scientific methods life and health are being safeguarded. This progress has been made by the experimental approach, i.e., by the trial and error method. Of the many trials made, some proved to be failures or at least not highly satisfactory. The satisfactory procedures, however, have been preserved and combined into codes of established procedures and policies. Thus by the trial and error method, striking growth in both quality and quantity of health service has taken place.

However, the knowledge necessary for effectively combatting a number of other important diseases, such as infantile paralysis, encephalitis, and cancer, is not yet available. But progress is undoubtedly being made. The scope of the public health field is widening. For example, the knowledge as to pneumonia and methods for its treatment has been advanced to a point that now warrants the organization of facilities by the medical and health forces for combatting the disease. Five state departments of health are already producing and distributing antipneumococcic sera and are operating laboratories equipped to diagnose promptly the various types of pneumonia. The recent discoveries with respect to influenza are likewise promising as to control possibilities. Syphilis and gonorrhea as very important public health problems have been brought out of hiding and are taking their places in health programs and in the news columns along with other important communicable and preventable diseases. Schools of public health for training health officers, public health nurses, sanitary engineers, epidemiologists, bacteriologists, serologists, sanitary chemists, statisticians, and other groups essential to public health organizations have been established and are now operating at full capacity.

In view of these developments, the question will naturally arise as to whether or not the public health movement has expanded as far as it should go. Has it reached full maturity or is it still in a young and growing stage? If it is merely well started,—and I believe this to be the case—what are some of the pressing problems awaiting solution? Researches on specific diseases are being carried on. (Illustrations) (Interpolation 1) But there are other than those relating to the discovery of new knowledge as to the causes and modes of spread of specific diseases and methods for their con-

trol that should also engage the attention of the public health administration.

The effective application of the knowledge now available to the protection of the health of the masses, notwithstanding the progress made, is still unsatisfactory in a number of particulars. Much more can be done along the conventional lines at present being followed, but certain of the more fundamental deficiencies relate to general policies in state and local government. Defects in our system of government need correction. Public employees in all classes of service and at all levels should be trained for the duties they are to perform, and they should be appointed, compensated, and retained in service on a merit basis and not be subjected to the uncertainty as to these features which characterizes the political spoils system. Your Public Health Association is considering such questions as civil service, old age retirement, etc. (Interpolation 2) This principle should apply to governors, mayors, and administrators of county business, to the highest as well as the lowest positions. Under present conditions a newly elected executive all too often comes into office inadequately informed and otherwise quite unprepared for the many responsibilities and duties that devolve upon him. By the time he has learned enough to function effectively his term of office may end and the community's business suffers while his successor is training for his job. The health department and the services it endeavors to render are impaired. This is likewise true of the other essential services. The period preceding and following the elections involves uncertainty for all public employees. (Interpolation 3) Their work is inevitably slowed up. The correction of the present system of public administration is of pressing concern to the whole community and to its employees. Efficiency and stability in the public business of the community call for a change in the system that will insure the employment of the business administrator, selected, retained and compensated on a basis of training, competency and experience. The situation is of deep interest to the health workers, but its correction cannot be brought about by a single service. As a matter of fact, experiments with city managers and county managers are being tried in many places with encouraging results. Should not the solution of this problem by means of experiments be undertaken by the community with the support of all its services?

Another community problem which is of concern to the health department relates to the lack of cooperation and of coordination between the various essential services of the community such as operate in the fields of education, social welfare and public health. A number of community problems do not fall entirely within a single field. Tuberculosis, for example, because it is communicable and endangers the life and health of well persons, is of vital concern to the health department. When it strikes down the breadwinner of a family, there results poverty and the necessity for public relief in the form of food, clothing, and medical care. Thus the social welfare service has to share in dealing with the problem caused by tuberculosis. In the teaching of hygiene and protection against disease to

the children, the schools have a role to play. In the health services to the children of the preschool and lower grades the interest of the education department in the health services is quite large and real. Other health problems such as nutrition or mental hygiene likewise deeply concern all the community services, and conversely problems mainly in the education or welfare services present public health aspects.

(Interpolation 4) These interrelationships are mentioned here merely to emphasize what you of course already know, namely that the community is or should be regarded as a unit. Programs for dealing with its various problems should be planned wisely and with detachment for the whole community by qualified persons. They can then be broken up and each service can undertake to deal with that part for which it is best fitted. This scheme calls for team play and for coordinated effort between the various services, and in its execution the trained public administrator should exercise leadership, guidance and stimulation. Here again by the experimental approach is offered opportunity for finding a practicable and effective method for dealing with an urgent community problem.

Finally, just one other vital subject in community life will be mentioned. While of interest to the health workers it is likewise of equal interest to other special services as well as to the community as a whole. I refer to the economic status of the community and of the individual families of which it is composed. The character of the community will be a reflection of the condition of the people who live in it. If they are restricted to a very low economic level their living quarters will not be conducive to good health. If the quantity, quality and variety of food are inadequate, they will be poorly nourished and as a result their mental and physical condition will fall below the normal and they will more readily succumb to disease. If economically unable to live decently they will be unable to finance the community services designed to insure health, development, and a normal existence. The expenditures for the education of the children will involve considerable waste if they are sick or below normal in health.

These gloomy observations are intended to emphasize the importance of having community leadership to guide the families of the community into vocations which will insure a reasonably high income and reasonable standards of living. While the possibilities of economic attainment will vary with communities, something can be done in each community to help every family find employment that will permit securing the necessities, and usually something above the necessities, of life.

In summary, it may be said that the forward march of public health in the past twenty-five years has been notable; that no progressive community now fails to have a health department staffed with fulltime trained health workers consisting of health officer, public health nurses and sanitation officers; that death rates from preventable diseases have been greatly reduced; that the scope of the public health field is steadily broad-

ening to keep pace with the advance of scientific knowledge; and that schools for training public health personnel have been established and are operating at capacity. The methods for operating a health service efficiently have been demonstrated, and the nation-wide extension of health service is under way. These developments arrived at by the experimental approach are gratifying, but a careful examination into the present status of public health will reveal a number of fundamental weaknesses some of the most important of which concern the community as a whole. Chief among these is the instability and inefficiency of community government due to the current political system which fails in many localities to provide for the employment and retention on a merit basis of trained executives to conduct the business of the community. This type of thing may prevail down the line in the special services and retard progress at every point, including health conservation. The leadership of trained executives, when utilized, can through sound procedures and careful planning and experimenting conserve economic resources and gradually raise the economic level to a point where the people can live well and enjoy adequate community services. Such leadership too can secure the cooperation among the education, health and welfare services that is absolutely essential for dealing effectively with its problems.

Chairman Bulla: Before requesting discussion of Dr. Ferrell's paper, I want to extend the floor to the President of the North Carolina State Medical Society, Dr. Strosnider. (Applause)

President Strosnider: I am delighted to be in here and hear such an excellent paper as has just been read to us by Dr. Ferrell, whom we have loaned to New York. He was the instigator or one of the originators of the plan to put you gentlemen and ladies to work. The work of building and laying the foundation for whole-time health officers was initiated in this state back about 1910, was it not, Dr. Ferrell?

Dr. Ferrell: Nineteen-eleven.

President Strosnider: Nineteen-eleven or 1912. When I hear of the work and see the work which is being done by this association, this association is what I consider the first line of defense of the medical profession and health forces of our state.

You contact the people, you contact the individual, you contact the remote communities, you many times bring the people to realize first what scientific medicine has to offer, and you many times contact individuals who have not taken advantage of the practitioners of the community or the surgery that is being offered to the community.

You find individuals and you point out the rule, directing their footsteps to those of our profession who are able to help to alleviate suffering, to cure, and to prolong life. So I feel that, Dr. Ferrell, you should feel very proud, sir,—

Dr. Ferrell: I do.

PRESIDENT STROSNIDER: —of the work that has progressed in this state.

And I don't know what we would do without Dr. Cooper in North Carolina. (Applause)

Dr. Cooper is the youngest man for his years I have met in quite a long time. New ideas never miss Dr. Cooper. He is ever alert to those things which mean better health for the people of North Carolina. He begins young, follows them through many years, from the babies he has raised, and he has seen to the welfare of the children of our state. One of the greatest assets we have is the children. The children of today are the men and women of tomorrow, and Dr. Cooper has realized that and he has been teaching us as best he can for a long period of years.

Dr. Cooper, if you live about five years longer, I believe you will have us in the post graduate department.

I want to thank you, Dr. Bulla, for the opportunity of being present at this splendid program which is being put on by this association. (Applause)

CHAIRMAN BULLA: I now recognize Dr. Rosenau, who will discuss Dr. Ferrell's paper.

DR. MILTON J. ROSENAU (Chapel Hill): Mr. Chairman, listening to this paper by Dr. Ferrell was like listening for the fisrt time to a Brahms symphony or a Bach fugue—harmonious, fine, profound and sound, but you can't get it all at the first hearing. I hope very much that Dr. Ferrell will have it printed so that we may read it, ponder over it, and give it our best thought.

It could not help escape our attention as Dr. Ferrell spoke, that what he gave us today in his paper was part only of his broad philosophy of public health work and advancement and good organization in our State of North Carolina, as well as in the entire Union.

He always insisted that public health work should be integrated with other social activities, not set aside as a thing apart, but become part of the social consciousness, as it has come to be. I never thought in the pioneer days of our struggles to put preventive medicine, public health administration on the map, that we would so soon see the time when this would be really so.

The people now take it for granted that they are entitled to health protection, just as they are entitled to fire protection, police protection, and other organized protections that society can and does offer.

It is particularly pleasing to a man who has devoted himself largely to scientific methods and laboratory work to have Dr. Ferrell even use as the title of his paper the experimental approach to this subject. There is no other approach, of course, that will measure advancement and give us the yardstick for sound public health administration.

He very properly pointed out the fact that when we deal with men in the world of society it is not like dealing with mice or guinea pigs in the laboratory. There we can quarantine and we can isolate them, we can expose them, we can either feed them with this or that, or not, we can give them an artificially controlled environment.

In other words, we can control all the conditions except perhaps one variable. But in society as we are organized, of course, sociology deals with so many unknowns, that it is absolutely necessary to proceed by what he properly speaks of as the "trial and error method." Well, that is the scientific method. After all, that is the method of the real scientist. He tries and he tries again and he makes his mistakes, blunders and he does it over again.

Dr. Ferrell—as I jotted them down as he went along—has made five special points. One was the need of security, based upon the merit system, which we all applaud. The next was the importance of continuity of service, which is so vital. The third was coordination of health work with education, with economic status, and with other community services, and the fourth was the necessity for trained leadership in order that we may be guided correctly, because, after all, we live in a pragmatic world in which some must be leaders and others must be followers.

The fifth, which is underlying and which is very vital, is the economic situation, because without economic support, of course, we cannot get the measures accomplished that we need. Then we might add to that, and I am sure Dr. Ferrell will agree with me, that the fundamental need for progress and advancement is not so much to put into effect what we already know, although there has been a great lag there, but the real need is for deeper, better, surer knowledge, where there are great gaps of ignorance, and modes of spreading the means of prevention, the specifics for cure, and the other things that are so important to make life surer and make life longer.

Dr. Ferrell, you were kind enough to speak about the importance of definitions, and may I say that in the land of Serendipity your successful achievements have come about through sagacity and not through accident? (Applause)

Chairman Bulla: Dr. Ferrell's paper is now open for discussion. If there is no other discussion, I will ask Dr. Ferrell to close.

Dr. Ferrell: Mr. Chairman, Ladies and Gentlemen: I have nothing to add. I was delighted after coming here to know that Dr. Rosenau was going to be called upon to discuss my paper, because I felt sure that whatever I might fail to say, he would supply, so you would not go away without something worthwhile.

There is nothing that I wish to say with regard to the paper. I am delighted, as I said, to see so many people here in this section. I was especially pleased to see Dr. Strosnider, President of the State Medical Society, come in. In 1910, the early part of the year, I set about to attempt

to build up forces with which to combat the deplorable sanitary conditions throughout the state and to mitigate the ravages of the hook worm, and I realized then, as I have since, that the undertaking would depend for success on those who were engaged in the work. I felt that my greatest responsibility was to find men thoroughly capable to carry on this work, to carry on what Dr. Rosenau mentioned, the spreading of the gospel of public health, men who could be emissaries in imparting knowledge and teaching better methods, and one of the first of the men I supported for the conduct of that state-wide program was Dr. Strosnider, and I can assure you that from the day he began the service until he went to broader fields, he gave an excellent account of himself. I have watched the progress of his work since.

I congratulate him and I congratulate the State Medical Society on this recognition which he so richly deserves. I could say a number of similar things about others who are here, but the time will not permit.

I thank you very much for the privilege of being here. (Applause)

CHAIRMAN BULLA: The next thing on the program is the election of a Chairman for this Section next year. Do I hear a nomination?

. . . It was moved and seconded that Dr. Roy Norton be nominated as Chairman. . .

CHAIRMAN BULLA: Are there any others? If not, all in favor of Dr. Norton being elected Chairman of this Section next year say, "Aye"; opposed, "No." The motion is carried.

Do I hear a nomination for Secretary? We don't seem to have one today, he is not in town, but I do think it is essential that we have a Secretary.

. . . It was moved and seconded that Dr. George Sumner be nominated as Secretary. . .

CHAIRMAN BULLA: Are there any further nominations? If not, all in favor of nominating Dr. Sumner as Secretary say, "Aye"; opposed, "No." Dr. Sumner is elected.

Is there anything else to come before this Section?

As stated a little while ago in Dr. Hamilton McKay's discussion, he asked that a committee be appointed. I am going to leave that to Dr. Reynolds and to the incoming Chairman to discuss whether such a committee is necessary or not.

If there is no further discussion, we stand adjourned.

. . . Whereupon, at four-fifteen, the meeting adjourned. . .

SECTION ON SURGERY

WEDNESDAY AFTERNOON, MAY 5, 1937

The Section on Surgery of the Eighty-Fourth Annual Meeting of the Medical Society of the State of North Carolina convened at two-ten o'clock in the Ball Room of the Robert E. Lee Hotel, Winston-Salem, North Carolina, Dr. J. D. Highsmith presiding.

CHAIRMAN HIGHSMITH: First I would like to announce that there will be a time limit of fifteen minutes on each paper, except the guest speaker, and that there will be an additional five minutes for discussions. We want to get through on time. We have seven papers to be presented, and I think we should proceed in that way in order that we may finish on time.

The first paper on the program will be by Dr. Roscoe L. Wall, whose subject will be "Twenty Years' Progress in Anesthesia." The discussion on this paper will be opened by Dr. J. C. Montgomery of Charlotte and Dr. Arthur C. Ambler of Asheville.

We will be very glad to hear from Dr. Wall.

. . . Dr. Wall then presented his prepared paper. . . (Applause)

TWENTY YEARS' PROGRESS IN ANESTHESIA

By ROSCOE L. WALL, M.D., Winston-Salem

From the time ether was first used by Dr. Crawford W. Long in 1842, nitrous oxide administered by Dr. Horace Wells in 1844, and chloroform given by Dr. James Simpson in 1847, little progress was made in the field of anesthesia until about twenty years ago. Anesthesia did not enjoy the attention that was given medicine and surgery during that period. I believe this was due to the specialty itself, because any one who could hold a cone and count the drops was considered a good enough anesthetist. This is not true today. In recent years physicians have specialized in anesthesia and have devoted their entire time and attention in research experimentation study and the giving of anesthetics. I believe that no branch of medicine or surgery has made greater progress than that which has been accomplished in the field of anesthesia during the past twenty years. Two decades ago we only poured ether, dropped chloroform and administered nitrous oxide very crudely. Today we have ether, chloroform, ethyl chloride, evipal, pentothal, vinethene, nitrous oxide, ethylene, cyclopropane, and as a basal anesthetic, avertin. We also have our various local, regional, and spinal anesthetics.

No one anesthetic is indicated in all operations, nor should be used routinely. But all have their place and should be used in modern surgery. The problem of today is to adjust all anesthetics to their proper place and use them where and when indicated. This takes close cooperation between the surgeon and anesthetist and I believe the anesthetist should be the surgeon's closest co-worker. We can but admit that without anesthesia surgery could have advanced but little. Of what use would be our progress in diagnosis, pathology, asepsis and surgery were it not for anesthetics? But for that oblivion which is so easily and comfortably brought about for the patient which makes all operations painless, the victories of surgery, though great, would have been impossible. With the rapidity of advance in anesthesia and the frequent introduction of new agents it is impossible for me to discuss them all in this paper. I shall only be able to discuss a few of them briefly.

Ether has long held first place as an anesthetic agent. In the hands of an untrained or occasional anesthetist ether is still the safest general anesthetic from the standpoint of immediate danger and safety of administration. In the hands of a trained anesthetist other anesthetics are as safe as ether to give and the post-anesthetic complications and discomforts are far less.

I only mention chloroform to condemn it. If given at all it should be administered very cautiously and slowly with plenty of oxygen or air and only for short operations. It is a very toxic agent, a heart depressant, a proto-plasmic poison, damaging the liver primarily.

Ethyl chloride like chloroform is very toxic. It is dangerous because of its spread of action and its cumulative effect. Sleep often deepens after you have stopped administering it. In giving it you often get an uncontrollable laryngeal spasm. Like chloroform it is a powerful vascular depressant and causes damage to the liver cells.

Now just a few words about intravenous anesthetics. I have some hesitancy in injecting into the circulation an anesthetic drug, which once injected is beyond one's control and cannot be withdrawn, except it be in very small doses or as a basal anesthetic. The two best drugs on the market today and most commonly used for intravenous anesthesia are evipal and pentothal. Both are derivatives of barbituric acid. Evipal is given in a ten per cent solution and pentothal in a five per cent solution. Two to five cc.'s are injected slowly while the patient counts, when they stop counting you repeat one-half the dose you have already given. The patient is generally anesthetized in thirty seconds to two minutes and the anesthesia lasts about fifteen to twenty minutes without repeating the injection. Relaxation is good in most of cases. It can be used to great advantage in the setting of fractures in the fluoroscopic room, thereby eliminating the possibility of an explosion which you can easily get with ether, ethylene or cyclopropane. Other indications for their uses in preference to the gases are few. They can be used for numerous short surgical

procedures requiring not more than fifteen minutes. The intravenous anesthetics give us one more to add to our anesthetic armamentorium to be used where and when indicated.

Vinethene or vinyl-ether is a very volatile clear liquid with a characteristic garlic-like odor. It is inflammable and is just as explosive as ethyl-ether. It decomposes when exposed to light and air and should be kept in tightly stoppered bottles. It should not be used more than twenty-four hours after the container has been opened. Vinethene produces anesthesia rapidly and only a small amount is necessary to produce general anesthesia. It increases the flow of saliva but does not irritate the upper air passages. Muscular relaxation is the same as that obtained with ethyl-ether. The recovery of consciousness after vinethene anesthesia is rapid and is comparable to that following the use of gas anesthetics. Its rapidity of action makes it difficult to maintain a smooth sustained even plane of anesthesia. It requires more delicate handling than ethyl-ether. Therefore, it cannot be used very well for long abdominal operations. Vinethene is particularly suited for short surgical procedures, such as minor surgery, fractures, tonsillectomies and dental surgery when a gas machine is not available.

The growth of gas anesthetics, nitrous oxide, ethylene and cyclopropane has been one of the most striking developments in medical and surgical progress during the past twenty years. Twenty years ago we used nitrous oxide only for pulling teeth, lancing boils and other short minor operations. Today the gaseous anesthetics have increased in popularity and safety until all over the world they are replacing ether and chloroform to a great extent for most operations.

Twenty years ago we were only using nitrous oxide in a crude way for minor operations. With the improvement in gas machines and technique we began using it for abdominal operations supplementing it with ether and at times when ether was contraindicated we used it alone, although I must admit this was a considerable struggle for both surgeon and anesthetist. We realized: That in nitrous oxide we had a pleasant, rapidly acting, non-irritating, inert, non-toxic gas; that it was not metabolized in the body and formed no chemical combination with body tissues; that there were far less post-operative complications and discomforts with this gas than with ether; that nausea and vomiting, acidosis, shock, pneumonia and other complications were rare. But we also found out that it was not a potent enough gas to relax our patients properly. In order to keep our patients asleep we could only give a small quantity of oxygen with nitrous oxide. Therefore, we had to get them very cynotic at times, thus producing an anoxemia.

So surgeons and anesthetists began to look around for a more potent gas that could be used as an anesthetic. So after much research and experimentation on animals, ethylene was first used on March 14, 1923, by Luckhardt and Carter in the Presbyterian Hospital in Chicago as a general anesthetic for a major operation. Since then ethylene has increased rapidly

in popularity and today it is used throughout the United States and the world. In potency it occupies an intermediate place between nitrous oxide and ether. Relaxation is far greater with ethylene than with nitrous oxide, but less than with ether. With ethylene you can give a greater percentage of oxygen than with nitrous oxide and cynosis and anoxemia is not necessary.

The induction with ethylene as well as with nitrous oxide is very rapid. The patient falls asleep in a few breaths with no struggling or excitement stage at all. The surgeon can make the incision in two or three minutes after starting its administration, therefore, saving much time in the length of anesthesia, compared with ether. Nausea and vomiting after the administration of ethylene is somewhat greater than with nitrous-oxide, but far less than with ether. When it does occur it is only transitory. There is no great rise in blood pressure with ethylene as with nitrous oxide, but no lowering of blood pressure as with ether. With ethylene there is freedom of sweating during the operation. Therefore, the patient is not dehydrated but stays dry and warm; there is no danger of post-operative chilling, which in many cases is responsible for a post-operative pneumonia. There are no latent after effects from ethylene, because the study of post-operative urinalysis, kidney functions, blood counts, hemoglobin determinations has shown no evidence whatsoever of any deleterious post-anesthetic changes. In septic cases, in fact in all cases the above are important points to remember. Ether produces a leucopenia, while ethylene and nitrous oxide do not interfere with phagocytosis. Nausea and vomiting, starvation, suppression of urine and a leucopenia, often decide the fate of the patient, but with the gas anesthetics, the happy frame of mind, the giving of food early, the increased flow of urine, the non-irritating effect upon the respiratory tract, constitute a group of forces that are bound to work for the patient's good. Therefore, the gas anesthetics are the ideal ones for the weak, the aged and all cases that are poor surgical risks.

The only disadvantage of ethylene is its explosibility, which if given with the proper precautions is nil. With our use of it for the past thirteen years we have so far had no mishap at all. If you carry out the following simple procedures you need not fear of having an explosion with ethylene.

(1) Have your operating room the proper humidity, fifty-five per cent or over.

(2) Keep all rubber parts of your gas machine moist by running water through them before the operation.

(3) Do not allow any smoking in the operating room nor use any electrical cautery, knife or other electrical machines that can produce a spark.

We were very well satisfied with nitrous oxide and ethylene as gas anesthetics until cyclopropane came along in 1934 and was first administered clinically by Dr. Ralph Waters at the University of Wisconsin. Cyclopropane has certain distinct advantages over nitrous-oxide and ethylene:

The first one is the greater percentage of oxygen you can give with it. With ethylene and nitrous oxide you give about eighty to ninety per cent gas and ten to twenty per cent oxygen while with cyclopropane you give about ten to twenty per cent gas and eighty to ninety per cent oxygen. As someone has said, with ethylene and nitrous oxide you give the gas plus enough oxygen to keep the patient alive and in good condition, while with cyclopropane you give oxygen plus enough of the gas to keep the patient asleep and relaxed. Anoxemia is to be avoided as much as possible in giving all anesthetics. The more oxygen you give with an anesthetic the better the anesthesia. The more oxygen administered the quieter the respirations. We used to think that a patient was not sleeping well under an anesthetic without making a loud snoring noise with labored respirations. This loud snoring was caused by the patient not receiving enough oxygen with the anesthetic, or by not having a free open air passage. We now know that the quieter, the more normal the breathing, the better the anesthetic.

The second advantage of cyclopropane over the other gaseous anesthetics is that it is more powerful and potent. Its potency approaches that of ether and chloroform. The relaxation with it is better than that obtained by giving ethylene. It is rarely ever that we have to supplement cyclopropane with ether.

The third advantage is that there is no pushing down of the intestines, though the patient may not be well relaxed. This is due to the very quiet respirations explained above. For the same reason there is no sweating.

The fourth advantage is that the danger of an explosion with cyclopropane is far less than with ethylene. This is due to the small quantity given and too, it is always given by the closed soda lime carbon-dioxide absorption method. If the mask is properly fitted to the face there is no leakage, so none of the gas is present in the operating room. We have been using the actual cautery below the costal margin and have had no trouble with it.

Nausea and vomiting occur less with cyclopropane than with ethylene and about the same as with nitrous oxide.

The fifth advantage: The shock following the administration of cyclopropane is less marked than that following any other anesthetic I have ever used. The quiet slow respirations, the slow pulse, the dry warm skin, the large quantity of oxygen being used keeping the patient decidedly pink, are factors to prevent shock.

Now just a few words concerning avertin, the new basal anesthetic for rectal administration. It should be given in small doses sixty to seventy milligrams per kilogram of body weight and must always be supplemented with ether or one of the gaseous anesthetics. Of all the anesthetic agents avertin produces the most pleasant and calm induction. The smoothness of going under while in bed is very impressive to the patient and constitutes a nearer approach to natural sleep than that of any other anesthetic. The sensation being identical with those of physiological fatigue and the desire

to go to sleep. It is one more means we have of properly pre-medicating our patients before operation. This is very important, especially in the highly nervous and apprehensive type. It is also valuable in children. It does away greatly with psychic shock which I believe causes more shock in a great number of operations than the shock produced by surgical procedures. With avertin there is less post-operative excitement, pain, nausea, and vomiting because the patient sleeps for sometime after the operation. A welcome feature is the amnesia. Even though the narcosis has been very light there will be no memory and the events of several hours will not be remembered with any clearness. In short, the whole horrible business of recovering from an operation is greatly eliminated.

I want to say in conclusion that I believe the combined anesthesia produced by the rectal administration of small doses of avertin supplemented with cyclopropane and oxygen makes the most ideal general anesthetic we have yet employed.

Chairman Highsmith: We will now hear from Dr. J. C. Montgomery, who will open the discussion on Dr. Wall's paper.

Dr. J. C. Montgomery: Mr. Chairman, Members of the Society. Dr. Wall has so thoroughly covered the field of anesthesia in the last 20 years that there is very little for me to say, except that I would like to emphasize one feature of his paper, that is, the pre-medication.

I feel that the anesthesia should be started the night before with children. I think the patient should have all the sedative he can take, enough to give him a quiet and restful night, and have no fear of the operation whatsoever the next morning. I think that the barbiturates and morphine the following morning give this ideal feeling. It has been said that as induction goes, so goes the anesthesia. There is a smooth induction with the barbiturates and morphine and hyocine, although, as Dr. Wall has brought out, avertin gives the patient the most ideal induction.

The use of the gases or ether can be minimized if the patient is heavily pre-medicated. I know only one condition where this would be inadvisable, and that is in any chest condition, where you want the patient to wake up promptly and not to depress the cough reflex. We have found that even with small doses of avertin, 60 to 70 milligrams, the patient will be coughing within a few minutes after coming back from the operating room following an operation under cyclopropane anesthesia.

I want to thank Dr. Wall for his paper. I enjoyed it very much. (Applause)

Chairman Highsmith: Dr. Ambler!

Dr. Arthur C. Ambler (Asheville): Mr. Chairman, Ladies and Gentlemen: Dr. Wall has told you what an ideal anesthetic avertin combined with cyclopropane is, but he failed to tell you who is going to give that avertin-cyclopropane.

Some of you are going to take exception to what I have to say, and I

am going to step on some of your toes. I realize in small hospitals in small towns that we have, for instance, in our state, that there are not trained anesthetists. You are using nurses in your small hospitals. Today anesthesia is becoming so highly specialized that a nurse is not capable of giving modern anesthesia.

Cyclopropane should not and cannot be given by an inexperienced anesthetist. Avertin and cyclopropane combined certainly should not be given by an inexperienced anesthetist.

Dr. Wall has told you how fine it is. The patients that you are operating on today are missing the chance of the nearest approach to an ideal anesthesia that we have, because you have not a trained anesthetist in your hospital or locality. Of course, I am entirely against nurse anesthetists. In the past two years about four states in the Union have passed laws prohibiting nurses from giving anesthesia. Not only is the nurse robbing some physician of his fee, but she is not capable of advising the surgeon as to what anesthetic is proper for a particular patient.

Anesthesia is developing so fast, so rapidly, and it is so complicated that the surgeon cannot possibly keep up with it or understand it. Therefore, who is going to pick out the particular anesthetic wanted for a particular patient? It is the anesthetist's job, and the anesthetist's only. The surgeon should merely say to the anesthetist, "We are operating tomorrow morning at nine o'clock. See the patient and have him ready."

The nurse cannot do that. She is not capable of giving a spinal, intravenous or our other modern anesthesias.

The impression I want to leave with you is to encourage the young men that are coming into your localities—one or two of them—in anesthesia, to back them up and play with them. Then you will have good anesthesias.

I want to say a word also, that is going to hit you between the eyes. It is with reference to the occasional anesthetist. How many of you would like an occasional anesthetist that you use, to give you an anesthetic? Dr. Smith from out at Bear Creek sends a patient in with an acute appendix. Well, he wants to give the anesthetic because that is the only chance he has of getting any money out of that patient. If you turn him down he is going to get mad and that will be the last time you get a patient from Dr. Smith. I know that. And you know that. That is why you use the occasional anesthetist.

You are jeopardizing your patient. You are robbing your patient of a safe anesthesia. You are taking responsibility, and you cannot do your work as well as you could if you weren't thinking all the time, "Is the patient all right?" That is what happens when you have an occasional anesthetist, a man who gives an anesthetic once or twice a month. A man doing that, particularly with the old-fashioned drop ether method, cannot give a safe anesthetic.

I want to go on record as telling you to encourage a younger man or an older man, whoever he may be, in your locality, who is interested in anesthesia, to take it up. When he does, play ball with him, and let the family doctor back in Bear Creek know that you are demanding modern and safe anesthesia for your sake and for the patient's sake.

Thank you! (Applause)

CHAIRMAN HIGHSMITH: Gentlemen, you have heard this paper of Dr. Wall, this most excellent paper, and its discussion. The paper is now open for general discussion.

Dr. Wall, will you close the discussion?

DR. WALL: I agree with Dr. Ambler about the young men taking up anesthesia, because anesthesia is a big field. In fact, when I started giving anesthetics there wasn't much field in it. You just dropped it in, a little chloroform, and that was about all. But today, with these different anesthetics it is quite a field. I think it is a field that the young doctors should get into. I believe they can make a good thing out of it and make a great contribution to the surgery of their communities.

I don't care how good a surgery you do, if you have somebody who gives a bad anesthetic and your patient dies, well, your surgery hasn't accomplished very much.

I agree with Dr. Ambler about nurse anesthetists. Most nurse anesthetists are probably good for instrument ether and some of them are all right to give gas, but as a rule I think it takes a doctor to give the best anesthetic with the modern anesthetics. I agree with Dr. Ambler and want to go on record with him in that regard.

I agree with Dr. Montgomery in what he said about chest conditions and the use of avertin. I think that the sooner a patient can wake up after the anesthetic, the better for him, if there is a chest condition. You certainly would not pre-medicate a patient like that. I think that one of the greatest contributions of cyclopropane to chest surgery is because of the great amount of oxygen you are giving all the time, keeping your patient pink. I don't care if he is breathing with one-third of his lungs, he will stay pink, and that is very necessary. (Applause)

CHAIRMAN HIGHSMITH: Gentlemen, in order that due consideration may be given them, I want to appoint the following two committees: First, a nominating committee to suggest a chairman for next year. I want to place Dr. Robert Gibbon, Dr. Sprunt and Dr. Sparrow on this committee.

The second committee is the one to judge the best paper for the Moore County Medical Society. The committee will consist of Dr. Hipps, Dr. Beam of Lumberton, and Dr. Sparrow.

The second paper is by Dr. Addison G. Brenizer. The discussion will be opened by Dr. Gibbon of Charlotte.

Dr. Brenizer will talk on "Harelip and Cleft Palate to Date."

Dr. Addison G. Brenizer: Gentlemen, the reason I have taken this title, which you may consider a little flippant—the reason of the "to date" is to include work done largely by Andreo Macklakli in Milan and Victor Veau in Paris. Those two men, I think, are about the best artists as well as surgeons that I have seen.

You would think that, harelip and cleft palate having been with us always, and a fixed deformity, there was very little more to be said about it. Apparently there is a good deal more to be said about it than the old surgeon's quotation that I used to hear, that "I had a cleft palate that I operated on."

I am bringing out a few quotations here to show how the repetition of operations, particularly on cleft palate, may be avoided, and I will run right through with the pictures.

. . . Dr. Brenizer then presented his prepared paper. . . (Applause)

HARELIP AND CLEFT PALATE TO DATE

By Addison G. Brenizer, M.D., Charlotte, N. C.

HARELIP

The present paper embraces, at least in part, former publications of the author, redescribing his fascial support to the stitch line in the so-called Langenbeck operation for cleft palace and Victor Veau's modification of the cleft palate operation and Veau's choice of conduct in the technic of closing double harelip.

There are several points learned in the course of thirty years experience with harelip and cleft palate, that might be recorded briefly and rapidly:

(a) The infant with a single-sided harelip may be operated on within the first month, and the earlier the operation the greater the advantage in the molding of the parts together from the mere configuration, adjustment and pressure of the lip. The gap in the alveolar process and the arrangement of the alae nasi is always nearer normal. It is to be observed that the proper adjustment and resulting configuration of the mouth and nose give the artistic effect, and more or less scar is not as unsightly as a failure to obtain this normal or average configuration.

Case I. Figures 1, 2, 3 illustrate this point forcefully. Figure I is the child with left-sided harelip at the age of three weeks. The cleft in the alveolar process was, only, freshened. Figure 2 shows the child at the age of six weeks. Figure 3 is the same child, fourteen years old. Observe closely the set of the nose, the columella and alae, the muscular function of the lip and cheek in a smile, the very small defect at the vermillion border of the lip, easily correctable. May I add, just here, that one of my greatest difficulties has been the following up and return of these patients. This one, surprisingly, returned after fourteen years; the small lip defect should have been corrected years ago. When I hear of Victor Veau's having the

FIGURE 1. Case I. Single harelip with cleft alveolar process at three weeks old.

child return for four or more stage operations, I envy his control of his patients. This attitude of patients has led me to strive to complete the case in the fewest possible sittings.

Case II. Figure 4, 5, 6 illustrate again a single-sided harelip, cleft alveolar process and palate. Figure 5 shows the necessity of liberally freeing the lip and ala nasi well out on the maxilla, so that the lip and ala can be brought in to a good fit in proper configuration with the columella and the other side. In spite of this care the ala is a little spread, the lip border is a trifle long, but functions well in a smile. This case is so near true in alignment that the only further operation necessary would be a little triangle removed in the left naris, which would, at the same time, lift the lip; the vermillion border is in good alignment.

Case III. Figure 7 illustrates a deficient, that is, an undeveloped right ala, in excellent relation to the columella and other ala and naris. There is a good approximation of the vermillion border, but too much elevation of it. This is again correctable by the removal of a little diamond shaped area of skin in the right naris and a slight drop of the lip. Case II and Case III show the necessity of following these cases up, so as, in the one instance to shorten the lip a bit, and in the other to lengthen it. Case III, now at thirteen months of age, is ready for his cleft palate operation and the small naris and lip defect will be corrected at the same time.

FIGURE 2. Same case six weeks old, three weeks after operation.

Case IV. Figure 8 is one of the worst and most distressing cases I have ever operated on, where the cleft lay the whole side of the face open through the maxilla, into the orbit, with ragged skin borders, ectropion of the lid. The left side of the nose and ala are deficient, the lip and cheek have been closed, the ectropion of the lower lid corrected, a skin flap fills in the background of the naris and the general configuration is pretty good. A neatly fitting whole skin flap brought in tubular and pedicled form from the arm must be placed in the left side of the nose just above the border of the ala so as to let it come down in place; the external squint will have to be corrected and the cleft palate closed. The progressive steps in such a case are difficult and tedious on the part of the operator, who sometimes receives the thanks of the mother, who has been worn out by the repeated operations and who never gets quite the plastic result she had hoped for. She admits an enormous improvement, but wonders if, since so much has been done, it could not have been better.

FIGURE 3. Same case at fourteen years old. Note the configuration of lip and nose, brought about by the molding of the lip. The scar of union of the lip is scarcely noticeable.

FIGURE 4. Case II. Single harelip, with cleft alveolar process and palate, three months old.

The cases up to now portray the scar resulting, where traction sutures of horse-hair of Kaldermic or wire were used piercing the skin, and show little or no marking of the sutures, but recently using the malleable wire suggested by Babcock, in addition to the double zero chromic catgut uniting muscularis and mucosa, I have been using a separate buried wire suture in the muscularis and a fine, subcuticular wire suture to be withdrawn, thus avoiding all skin piercing sutures and thus securing a better plastic result.

Case V. Figure 9 illustrates such a closure with the wire emerging at the top and bottom angles of the wound. This is the case of a child three years old, operated on for cleft palate and right-sided harelip at the same time. As already mentioned, the harelip and cleft palate are operated on in separate stages, the lip as early as possible and the palate at about one year. I occasionally do both operations at the same time in these older and neglected children, reasoning that if they postponed the operation so long in the beginning, perhaps they would not return for the second operation.

As surprising as it may seem, I have had a family of seven individuals, where the father, mother, and all five children had harelip and cleft palate. After operating on three of the children, at no trouble or expense to any of the family, the rest of the family decided that they would stop at that,

FIGURE 5. Same case soon after operation. Note the liberal freeing of the lip and ala nasi, well out on the maxilla, so that the lip and ala can be brought in to a good fit with the columella.

since such a deformity did not offer them such a great inconvenience anyhow, and since they did not have to show off down on the farm, and since the children with the deformity would be more apt to remain at home, they would leave the other four as they were. As we say in French, "Chacun a son gout!"

It is very difficult to lay down hard and fast rules how to cut plastic skin flaps, when one, in fact, must be guided by the particular case. But, as already mentioned, the normal adjustment and configuration must be aimed at, and, while this fitting must be exact, measurements are of little value, the parts must be placed together to fit, first the vermillion border and then the ala, the portion of lip between will usually fall into line. I once saw a surgeon illustrate these lip unions with triangles, most elaborately measured and labeled, resembling an intricate geometrical figure. In the discussion another surgeon remarked: "The doctor does his harelip by note; I do mine by ear!"

FIGURE 6. Note case at five years old, still a little wide in the nares and lip a little long, correctable by removal of small triangle in naris, approaching ala and lifting lip.

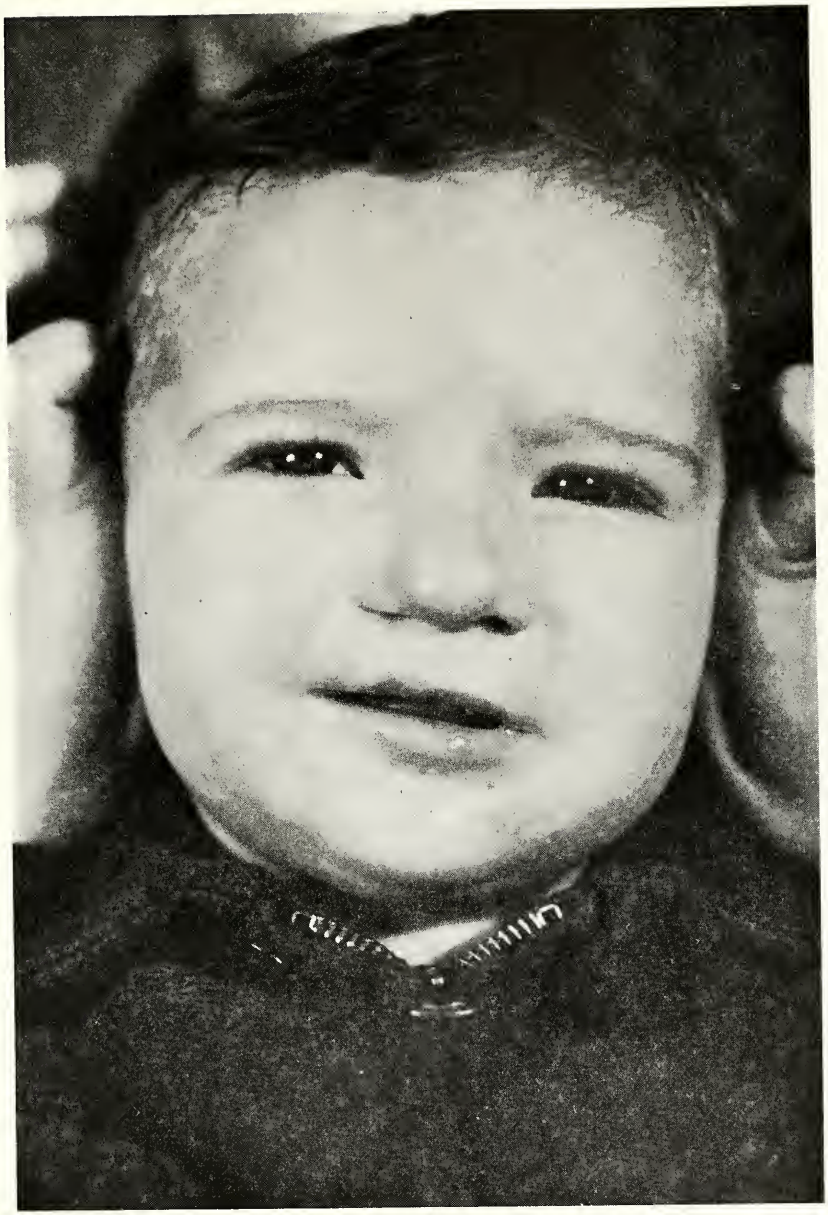

FIGURE 7. Case III. Right harelip and cleft palate, deficient right ala, slight elevation of lip, correctable at the naris or vermillion border, preferably at varmillion border, because naris is well formed.

FIGURE 8. Case IV. Left harelip, cleft alveolar process, palate maxilla and orbit. Lip closed, maxilla and nares closed by skin flap, ectropion of lid corrected. Ala to be lowered by interposition of skin.

FIGURE 9. Case V. Right harelip and cleft palate, one stage operation. Buried stitches and subcuticular stitch of fine metal wire to avoid piercing sutures. We are now using ribbon catgut between mucosa and muscularis to relieve traction.

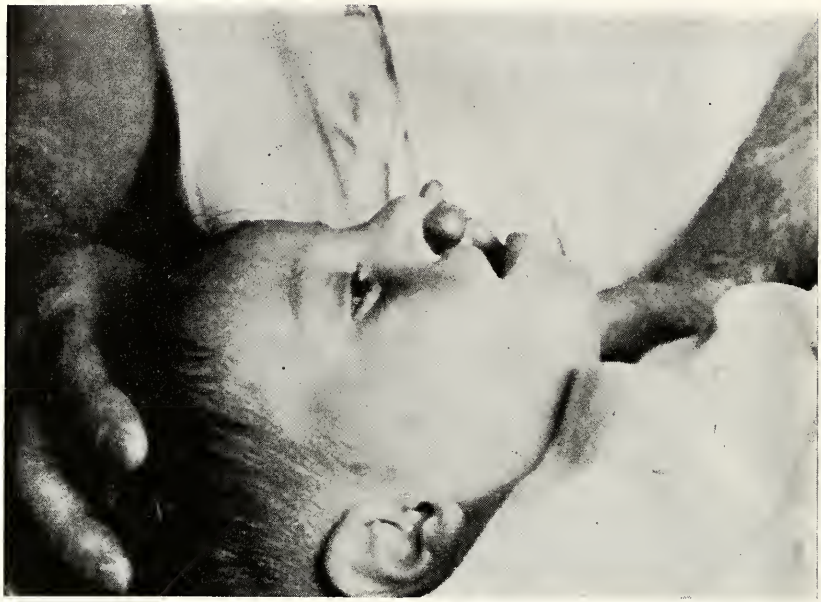

FIGURE 10-A. Case VII. Double harelip and cleft palate, with very prominent premaxilla and very small columella, repaired according to the technic of Victor Veau.

(b) The story of double harelip with variously projecting and twisted premaxillae is a different story from single harelip. While most of the single harelips may be and preferably should be closed at 2 to 4 weeks, double harelips should be postponed to 2 to 4 months, particularly if the premaxilla requires pushing back and wiring. This procedure involves some time and abuse and the child must be healthy, free from rise in temperature, the skin about the face clean, and no cold.

(c) A single cleft in the alveolar process is rarely wired or even freshened at the first early operation and great many double harelips, particularly when done early, require no bone section and pushing back of the premaxilla, but fall into line with the alveolar process after union of the lip. If there is any bone cutting, it must not be done through the vomer and nasal septum, taking out a triangular section, because, while such a section allows the premaxilla to hinge back, it also effaces the projection of the nose. The section of the bone should be done, far forward, right where the vomer joins the body of the premaxilla, the so-called neck. As Victor Veau states, "The projection of the nose depends upon the integrity of the septum, and any resection of this bone will flatten the nose in a very ugly manner." Victor Veau describes his arrangement of his operation for complete double harelip approximately as follows:

FIGURE 10-B. Same case after the partial lip repair. Note the small piece of central lip at the columella and the necessity of wide shifting of the lips. The cleft palate and niche in the lip have since been repaired. The lower lip distributes in favor of the upper lip. Refer to Figure 17.

FIGURE 11. Case VI illustrates the effect of sectioning the neck of the premaxilla, instead of septum and shows the first stage of Victor Veau's operation for double harelip.

An incision two centimeters long is made along the septum right up to the posterior or buccal surface of the premaxilla, where the vomer joins the body of the premaxilla at a point called the neck. The mucoperiosteum is raised and with a pair of bone forceps, the neck is cut horizontally, and the premaxilla is pushed straight back. Sometimes a prominence on the vomer must be snipped away to allow the neck to be reached. The premaxilla must be pushed straight back and not allowed to rotate, so that the incisor teeth remain absolutely vertical and in line with the lower incisor teeth. The mucoperiosteum need not be stitched. A small drill with a hole in it, to carry a wire, is introduced from in front, directly in the middle of the premaxilla between the soft parts and the bone, and is pushed backward to the space where the neck was cut; there a double wire is threaded into the drill and the drill pulled back through, the two ends in front are then inserted back for a short distance under the mucosa, so as not to appear in front and the premaxilla wired on each side to the alveolar process.

"If the premaxilla has a larger width than the space between the maxillary process, the teeth of the premaxilla must be taken away. If, on the contrary, the premaxilla is much smaller, it must be carried into contact with one of the edges of the alveolar process."

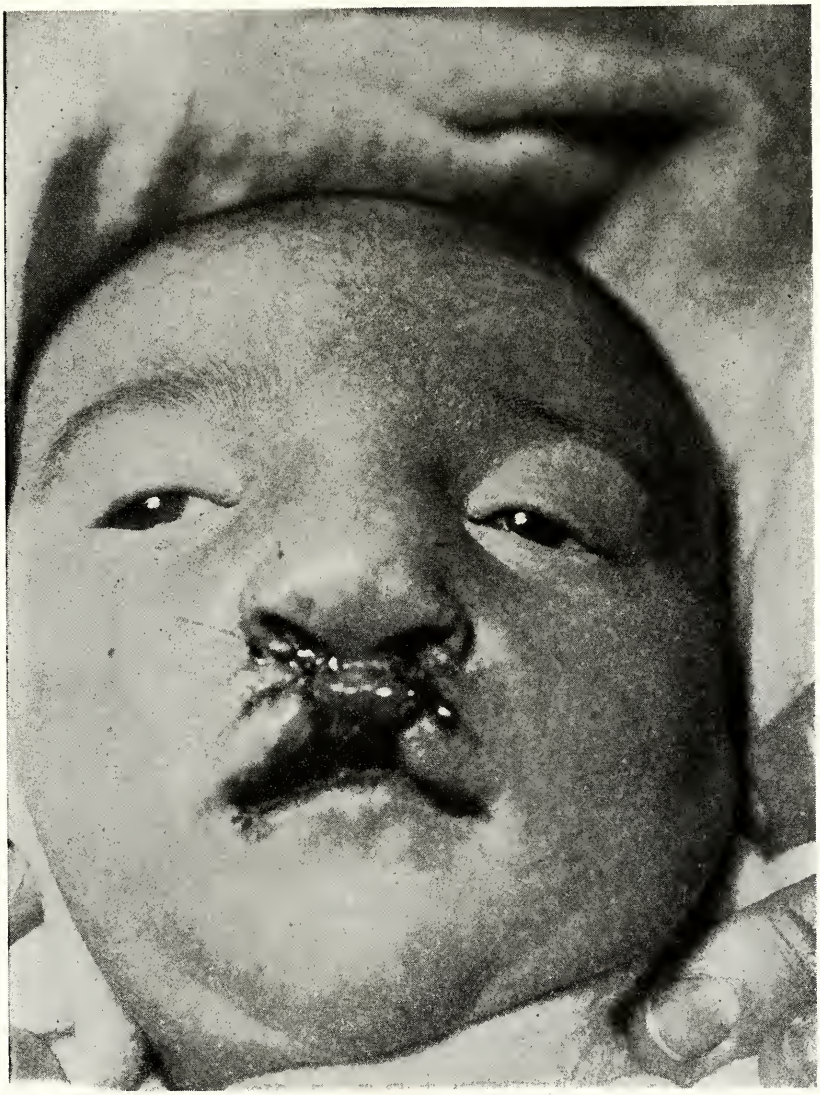

FIGURE 12. Front view of the same case. First stage of repair of double harelip and cleft palate. Lip united roughly to receive second stage operation later. We are now using ribbon catgut or fascia passed from flap to flap under lip of premaxilla.

FIGURE 13. Indicates the pattern to be cut in the lip, Figure 12 in the second stage repair of double harelip. All effort is now made to relieve traction on both lip and palate by the use of ribbon catgut and fascia and unite them in one stage.

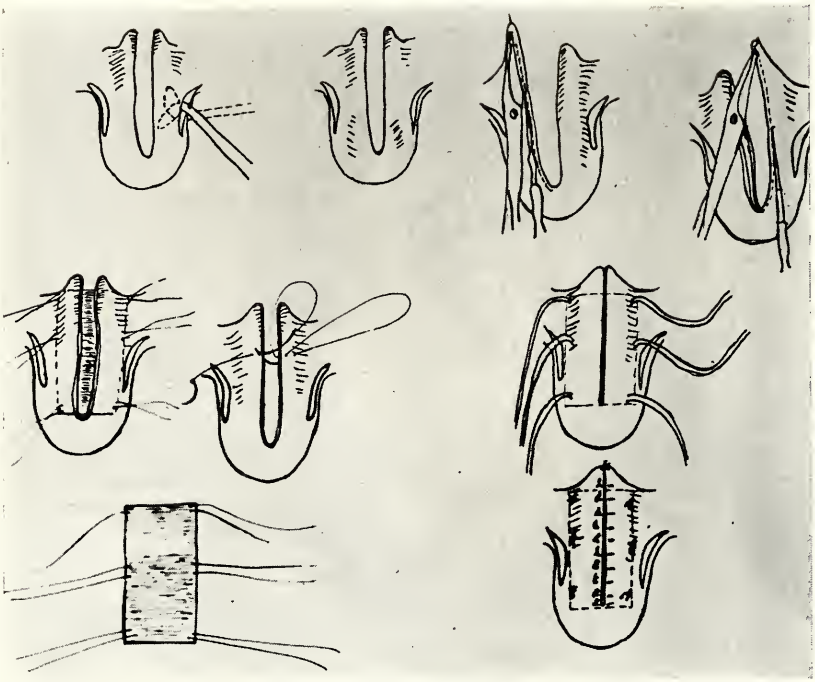

FIGURE 14. The Langenbeck operation to which is added a rectangle of fascia or strips of ribbon catgut to support and relieve the tension on the stitch line in cleft palate.

"To facilitate the fusion of the bones it is well to lay bare the contiguous surfaces by taking away a piece of the mucosa, but one must not count too much upon this fusion. I have only observed it once."

"We do not try to make a completely restored lip, our only object is to create a bond of the soft parts in front of the drawn-back premaxilla; I think this means of fixing the premaxilla is much more important than the deep ligature by the silver thread." (That is, the wiring of the premaxilla between the maxillary processes.)

"The two muco-cutaneous edges are refreshened and the skin sutured. My custom is to place a vertical silver thread which takes in the whole lip and which is knotted to the lower part, that is, a wire suture passing up one lip flap, through the soft parts of the premaxilla and down the lip flap on the other side, drawing the whole lip together. This thread generally cuts the mucosa, but that is of no importance, because the scars of the mucosa are never apparent."

These statements of Victor Veau, though I am quoting him almost literally, sound simpler than they really are, for example, even after push-

FIGURE 15. Case VIII. Cleft palate repaired by use of strips of fascia. The fascia has become incorporated and conveyed bone cells across the hard palate. Repairs have been accomplished with fascia, which seemed impossible otherwise.

ing back the premaxilla on sectioning the neck and wiring it to the maxillary processes, the lip flaps must be securely united because, as he says, the security of the lip is more important in holding the premaxilla itself than actually the wiring of the premaxilla. The wire alone, passing through the whole lip, can not be depended upon, and I am of the opinion that this first lip closure should be as complete as possible, even though to be subjected to a second operation.

Case VI. Figures 11 and 12 illustrate beautifully the section of the neck instead of the septum and how the premaxilla can be made to fit in and at the same time the projection of the nose be preserved, but also shows that in spite of liberal freeing of the lateral lip flaps and union with wire, one side of the lip pulled and had to be reinforced.

FIGURE 16. Case IX. Repair of palate after the removal of a tumor of the palate.

FIGURE 17. Case X. Wedge removed from the lower lip twice. To illustrate how one lip adjusts itself to the other. Refer to figure 10-B.

Case VII. A second recent case not illustrated shows a section of the neck of the premaxilla and its pushing back, a preservation of the projection of the nose and an almost complete lip operation, except the vermillion border, at one sitting. Every effort in the way of wiring the premaxilla and suturing for the stability of the lip has been made at the one operation because it should be as complete as possible even though a second operation is anticipated. The muco-cutaneous border was not cut away but was cut only two-thirds of the thickness of the lip, through skin and muscle, nearly down to the mucosa and used to help hold the lip together, also wire sutures were placed, buried in the muscle, as well as traction sutures. The traction sutures, piercing the skin can be dispensed with, as in Case V, where a second lip operation is not anticipated and where an immediately better plastic result is sought. In this present case, the mucosa of the vermillion border is left intact, to be dissected back and used to support posteriorly, the approachment of two lateral flaps at the second operation.

Second lip operation by Victor Veau:

"The qualities of a well restored lip: (1) The cutaneous part must be supple; no piece of mucous membrane must be enclosed. (2) The cutaneo-mucous line must be rectangular (clearly cut). (3) muscles of the philtrum must be very living to assure the continuity of the orbicular. (4) The mucosa (vermillion border) must be quite apparent, projecting without a notch in its lower edge. (5) The totality of the lip must be neither restrained nor flattened."

I have quoted Victor Veau very freely, because I follow him very closely in his operation for complete double harelip, Case VII, Figures 11 and 12, and refer my readers for excellent cuts and descriptions to his book and to a paper published in English by him in the *Annals of Surgery,* Vol. LXXVI, August, 1922, No. 2, pp. 143-156. Here is how he describes the second operation on the double harelip:

"1. The Skin—the easy part—all procedures are good, all incisions can be utilized. It is of first importance to make the incision in the skin itself, but away from the mucosa to avoid with certainty the piece of mucous membrane that remains. The lip is nearly always too high because the atrophied philtrum becomes larger afterwards.

"2. The Muscles—the most important part—they must be reconstituted carefully to give the suppleness of the lip.

"3. The Mucous Membrane—the difficult. The taking away of the mucosa of the philtrum is the chief fault of the classical operation. It is the lack of the mucous membrane that gives the flattening of the lip."

Case VII, Figure 11, illustrates the first incisions in the lips and their union at the first operation.

"Technic.—Figure 13 indicates the line of incision. With the bistoury you trace the line c.b. in taking great care: that this line passes away from

the mucous part; that the bistoury only cuts the skin; and that the angles b.c. are very clearly cut at right angles.

"At the level of the lower edge of the philtrum the totality of the muscle must be conserved.

"The cutting of the lateral part is done in commencing by the line e.f. which includes the whole of the mucous membrane with about two millimetres more of skin. It must be perpendicular in the direction of the lip. The incision will include the inner and outer mucous membrane.

"When the bistoury arrives at the point f. it makes the line f.g. three millimeters long which approaches the cutaneomucous line, but must never cut this line. This little angle will give to the median part of the lip a slight bend which will especially contribute to its beauty.

"The line g.h. will be drawn obliquely in leaving progressively the mucous membrane. Its length has no importance; its object is to diminish the tension of the suture of the skin; it can be lengthened afterwards.

"After having cut one side, the other is cut. It is very important that the two lines f.g. have the same length. The lines g.h. can have different lengths.

"The part included between the points b.a.f. will be taken away, taking great care to penetrate into the nostril in order to diminish the spreading out of the nose to be certain that the whole of the mucous membrane is taken away, but the buccal mucosa must not be cut.

"When all the incisions are traced, you have the large wound with the several surfaces to be united. A pair of forceps are placed on the mesial part of the philtrum, which is drawn into a triangle because it is very elastic.

"The suture of the muscles must be done with great care on the lateral parts and on the lower part to give homogeneity to the lip. I employ the finest catgut.

"The suture of the skin.—At this moment the edges are in contact. The suture must be made with the greatest precision. I employ Carrell's needles and vascular silk. The first stitch is the most important; it must be placed exactly on the cutaneomucous line. The lower edge of the philtrum will be stitched afterwards, and lastly of all the lateral parts. (Figure 9 is a harelip united with catgut through the mucosa and muscle, malleable wire in the muscle and as subcuticular stitch.)

"Generally the tension of the lip is such that the end h. of the lateral incision comes into contact with the lower lateral stitch of the philtrum, b. It is often unnecessary to make the vertical stitch (that is, in the form of an inverted U up one lip through premaxilla, down other lip, entering and emerging through mucosa.)

"Suture of the Mucous Membrane.—I employ fine horsehair, but these sutures have not the importance of the sutures of the skin, because there

is no apparent scar on the mucous membrane. You can always put two stitches on the extremity of the side pieces of skin; they must be deep, taking in muscle which is underneath.

"The lower end of the philtrum, which is situated behind, must be sewn in behind the union of the vermillion border.

"To fight against the traction, I am accustomed to place a silver thread across the lip as shown in Cases VI and VII, Figures 10 and 11.

"The consecutive care will be the same as that given after the first operation.

"Accidents—Imperfections—Disunion is observed sometimes after the first operation. Nearly always it is produced on one side. A few months after, a new suture is made.

"The spreading out of the nostril is an almost inevitable accident. When it is not too noticeable it can be left. But sometimes it is very ugly; it should then be remedied by a third operation, similar to the second.

"If it is produced after the second operation, it is necessary to operate again to bring it inside to the edge of the nostril by tracing a piece of skin as it is shown by the same figure, Figure B.

"The median notch of the lower edge of the lip has often been observed by me before placing the big silver thread, Case VII, Figure 11. It is easy to correct by a slight operation.

"The surgeon must not neglect the ultimate treatment of his patient. The phonation will be much ameliorated in giving to the lip a sufficient suppleness by massage, by spontaneous movement. The mastication is always defective because the teeth of the premaxilla cannot be used; it is necessary to wear an apparatus."

CLEFT PALATE

(d) As to the repair of the cleft palate, all wiring and compression operations like those of Brophy which may pass wires through the maxillae and at the same time pierce the tooth pulps or the antra or encroach upon and bend the vomer and nasal septum, which they do, should not be employed.

(e) The use of shifting flaps over the existing framework, after the plan of the von Langenbeck operation is the type of operation of choice. Usually plenty of flap material exists to span the deficiencies if properly liberated and shifted.

(f) The cleft palate should be repaired at about one year old, when the child is strong enough to withstand a considerable operation but before he begins to talk. Even at this age, good speech should be assured by, slavishly, following the directions in Dr. Frederick Martin's book on speech training.

A number of years ago, I decided the type of von Langenbeck's operation to which I had added a strip of fascia taken from the fascia lata,

which after the muco-periosteal flaps had been liberated and pared, was placed behind the flaps and there held by sutures, to take the strain off of the stitch line and add support to it, Figure 14.

In at least two of these cases, periosteal cells were conveyed across the mid-line and a bony partition filled the defect.

Case VIII. Figure 15 and Case I, Figures 3 and 4, represent two of a group of three patients that I have been able to follow and photograph from three weeks, three months, and six years, respectively, to 24 years, 14 years, and 18 years, respectively, and they can all say plainly without nasalizing the slightest bit:

A skunk sat on a stump;
The skunk thunk the stump stunk,
But the stump thunk the skunk stunk!

Again Victor Veau has added some modifications to the von Langenbeck type of operation:

The edges of the cleft are pared, and from the mid-line outward the nasal muco-periosteum is separated from the hard palate and then the buccal muco-periosteum is separated from the bony palate partly from the mid-line out and partly through counter incisions around the posterior part of the alveolar process. The nasal muco-periosteum and the buccal muco-periosteum are united as separate layers. The ideal operation of support is this modification of Veau with the strip of fascia (Brenizer) placed between the nasal and buccal flaps, thus offering support for both flaps and the possibility of bridging the bony defect with bone cells across the fascia. These combined modifications are particularly effective in wide clefts, with double harelip and double clefts between the alveolar process and the premaxilla. Case VIII, Figure 15.

Cases IX and X, which show almost perfect results in cleft palate repair, the latter somewhat better than the former, in that a long and better soft palate has been obtained and the uvula has been formed about as it should be, have been omitted because these photographs are not good and are so difficult to make in these young, crying, struggling children, that I have resorted to color moving pictures to illustrate them.

By using the methods and modifications as cited above, almost every case can be adapted and almost ideal results can be obtained.

Chairman Highsmith: Dr. Gibbon.

Dr. James W. Gibbon (Charlotte): Mr. Chairman, Gentlemen: Dr. Brenizer has covered the subject rather completely, and what I say will probably be more by way of emphasis than addition.

It is a condition, strange to say, that is much more prevalent among the poor. Most of these children come from the needy families.

The age at which this work should be started has long been a controversial matter. I think, as a rule, probably as a man becomes more experi-

enced in doing the work, he begins to do it at a younger age. I am convinced that the younger the patient is when the work is started, the better the results.

We are doing them now—and I see one of the cases Dr. Brenizer reported was done in the first week—at two weeks or three weeks of life. In other words, at the first operation the lip is closed, or at least a part of the lip is closed, and the child allowed to mature. With increase in growth and age, in practically every instance if it is done early, the pressure of the lip will close the opening in the alveolus, the bony opening.

In many cases it goes further. It will have a tendency to narrow a very wide cleft palate. So it is a decided advantage to begin the closure of these defects early in life, as soon as it is compatible with the health of the child.

Of course it is very important that these children should be well nourished, should gain in weight, and usually should be gone over by a pediatrician before any operative work is begun.

To repeat, then, it is hardly ever necessary to do anything about the alveolus even in the extreme cases if the work is started early. Of course, if the lip is not closed until the child is over six months, a year or two years of age, it is necessary.

In regard to the double cleft lip where the operative work requires several operations, even though the deformity is marked, it is very well to close one side, then, a week or two weeks later, close the other side to the premaxilla. In other words, it is important to bring that lip pressure to bear on the underlying bone as early as possible. It also benefits the cleft in the palate.

In regard to the closure of the palate, that is also best done early. I used to think that those things were probably more safely done in two stages, but the golden opportunity for closing a cleft palate of any size or any length is at the time of the first operation, for the simple reason that the muco-periosteal flaps are soft. They are pliable, easy to handle, and they can be approximated with much greater ease than at a second or third operation.

So that the ideal way to handle these cases, it seems to me, is to start to work early, and by the time the baby is eight, ten, twelve months or a year and a half old, and the lip is probably completed, the palate may be readily closed with one operation, whereas in the beginning it may have been a very wide cleft.

As Dr. Brenizer has said, the von Langenbeck operation, I think, has withstood the test of time. There have been a great many operations devised for closing cleft palate, and it is a mean operation. He has emphasized the old saying we used to hear, "I had a cleft palate I operated on."

The opportunity that you have at the first operation of closing this cleft is the best that you ever have. After those flaps have been manipu-

lated very much, in two or three stages—I expect it is Dr. Brenizer's experience; I know it is the experience of most people who have done this work—the muco-periosteal flaps become so thick and unwieldy that it is difficult to handle them and approximate them.

This type of surgery, as in all plastic surgery, depends for its success upon freedom from tension. The sutures you insert absolutely must be entirely free from tension. There must be preservation of the blood supply and approximation of broad raw surface in the suture.

Thank you! (Applause)

CHAIRMAN HIGHSMITH: Dr. Brenizer's paper is now open for general discussion. Is there any general discussion on Dr. Brenizer's paper?

DR. C. L. HAYWOOD (Elkin): I would like to ask Dr. Brenizer what suture he uses on palates and closures of the lips.

CHAIRMAN HIGHSMITH: Dr. Brenizer?

DR. BRENIZER: Mr. Chairman, I want to thank Dr. Gibbon for his discussion. I want to thank him especially because I had suggested his name for this discussion and had said nothing about it to him up to this point. He has done a lot of cleft palate work. He is exactly right. The point I was trying to bring out was to do everything you can in the beginning to get a union of the cleft, and secure it at the first operation, because when those palates are thick they are very difficult, impossible to close properly, and are never supple. Therefore, these modifications that have taken place with the old von Langenbeck operation.

As to the suture material on the cleft palate, I use a very fine Kaldermic. It is silk covered over with seloid. I use very few of those and fill in between with chromic catgut, No. 00. I don't use the traction sutures other than the fascia sutures, buttons and tubes and so forth, because I try to get just as free a flap as I can, and do not tie vessels.

The reason the child is waited at all until it is about a year old and in good health, with no cold and no sores about the mouth, is that the child has to be waited at a certain time to withstand that operation, which entails a fair amount of shock. Of course, the earlier the thing can be done, the better. If it can be done a good while before the child attempts to speak, leaving no hole whatever for air to escape through, the child will almost invariably speak without nasalizing.

The operation of wiring, or trying to cram the palate close together by wiring, the old Brophy operation, is to be absolutely decried for these reasons: Sticking the wires through, you can't be assured at all that you don't stick into the teeth pulps. Next in order, if you do pull the alveolar processes together you will always have a very much narrower superior arch than you will an inferior arch. The teeth will not fit.

In addition to that, you will cram the vomer and the nasal contents up, and bend them, so that there is future nasal trouble. So there is never any attempt made to approach any further than the soft parts will carry

them on account of future trouble if such operations as the Brophy type are used.

CHAIRMAN HIGHSMITH: Thank you, Dr. Brenizer.

If there is no objection, I would like to extend the courtesy of the floor to our guests and visitors.

The next paper on the program is by our guest speaker, a man who is known by many of you, both personally and by reputation. He is from a college which for more than a hundred years has been a leader in medical education in this country.

It is my great pleasure to present to you Dr. Thomas A. Shallow, Professor of Surgery at the Jefferson Medical College of Philadelphia, whose subject will be, "The Surgical Approach to Foreign Bodies in the Gastrointestinal Tract." (Applause)

Dr. Shallow.

. . . Dr. Thomas A. Shallow then read his prepared paper. . . (Applause)

THE SURGICAL APPROACH TO FOREIGN BODIES IN THE GASTROINTESTINAL TRACT

By THOMAS A. SHALLOW, M.D., F.A.C.S.

The types of individuals who most frequently come under our care for the removal of foreign bodies from the gastrointestinal tract are children and the insane. We have no preventative control over these but they do present a serious surgical problem which depends upon two factors: (1) the character of the foreign body, and (2) the site of lodgment.

Concerning the character of the foreign body, those which are of sufficient size to produce obstruction, primarily lodge in the esophagus. It would be futile for us to discuss the removal of foreign bodies from this area, except, in passing, to compliment the esophagoscopists for the progress which has been made by them in the removal of esophageal foreign bodies, and to compare the present day methods with those used in my student days. Then it was the custom to search blindly for the foreign body with the hair probang, the coin catcher, or some other ingenious device utilized for this purpose. When these methods were not successful, external pharyngotomy, with or without the aid of the cystoscope, was done, many of the patients succumbing to this heroic procedure.

In the past we have been called upon to remove surgically foreign bodies from the stomach but now our field has been invaded by the esophagoscopists who remove them either with the aid of the esophagoscope or the gastroscope. From this it will be seen that the surgeon is not called upon to remove foreign bodies except from the intestinal tract. A foreign body must be of limited size to pass through the pylorus, otherwise it remains in the stomach and can be removed pre-orally. In this series which consists of 20 cases, mostly children whose ages range from three months

to ten years, the foreign bodies removed consisted of long sharp structures such as the bobbette pin, the open safety pin, hair pins, needles and bar pins.

WHAT IS THE BEHAVIOR OF LODGED FOREIGN BODIES? AGE PLAYS A PART

(1) The foreign body may lodge indefinitely before it penetrates the intestinal tract. A foreign body, represented by one case in this series, passed through the duodenum without producing any symptoms or signs of peritonitis. The needle was removed from the anterior abdominal wall.

(2) A foreign body may penetrate the bowel and produce a local peritonitis. Three cases in this series is represented by this pathology. The needle partly passed from the third portion of the duodenum and entered the adjacent transverse colon, producing a local abscess or fistulous tracts.

(3) A foreign body may pass into the retroperitoneal structure without producing peritonitis or abscess and lodge in this area.

WHAT IS THE METHOD OF DIAGNOSING WHETHER A FOREIGN BODY IS LODGED OR WILL PASS?

Undoubtedly temporary lodgment of a foreign body occurs but for some unknown reason it progresses without obstruction until it finally is passed. This fact is strongly exemplified by one of our cases. The foreign body was lodged for ten days in exactly the same position at the ileocecal valve and then was passed spontaneously, by the patient. From this it is evident that daily fluoroscopic examinations *must* be made of all opaque foreign bodies, in order to determine the progress of the object. During this period, there is no risk in waiting unless the patient shows definite signs of local peritonitis. When one considers the mortalty of surgical removal of foreign bodies, he cannot attack this problem without very careful consideration, not only of the risk due to surgery but also the unnecessary danger inflicted on the patient if the foreign body had passed spontaneously. I well remember hearing a very outstanding surgeon jocularly remark that after opening the abdomen, searching diligently through the coils of intestines and not finding the foreign body, the nurse introduced her finger into the child's rectum and removed the object. This should be considered an unnecessary procedure and it exemplifies the importance of a fluoroscopic examination immediately before surgical intervention.

THE SITE OF LODGMENT

The first and third portions of the duodenum are the most common sites of lodgment for the character of foreign bodies which came under our observation, the ratio being 4 to 1. The second portion of the duodenum was the site of lodgment of most of the foreign bodies and the third portion next in frequency.

After the foreign body leaves the duodenum, the next point of lodgment is at the ileocecal valve and then the ascending colon. When the

foreign body has left the ascending colon, it must be searched for in the rectum and manually removed therefrom.

The question now arises—why does a foreign body become lodged? It can be seen that the duodenum is the stumbling block to Nature's effort to pass the foreign body. It is likewise well known that when the foreign body has passed the duodenum, in most cases, it will pass throughout the remaining portion of the gastrointestinal tract. This fact is emphasized by one of the cases used in this series but not reported—a patient of Dr. Clerf's. An open safety pin was lodged for three days in the duodenum of a two-year-old child but finally passed without surgical intervention. If this one seemingly impossible feat has been accomplished by Nature, why interfere surgically at all? Unfortunately, all foreign bodies do not behave alike. In one of our patients, a large pin passed through the entire intestinal tract unaided. In the same patient a needle was swallowed at the same time, or subsequently. It lodged in the duodenum, passed through the wall of the duodenum and was removed from the abdominal wall. In another patient a large darning needle passed through the wall of the cecum and I removed it from the retroperitoneal space in the midline. In still another case in this series, a needle passed partly through the third portion of the duodenum into the adjacent transverse colon, forming an abscess in this area. We therefore emphasize that the mere presence of a foreign body in the gastrointestinal tract does not call for immediate surgery but it does call for continuous observations with the aid of the fluoroscope. We can conclude that if Nature is given sufficient time, in the majority of cases the foreign body will pass through the entire gastrointestinal tract unaided, particularly when it has passed the duodenojejunal junction. We have observed some of these cases for two and six weeks before recommending surgery because it must be understood that most of these patients were children in a period of life in which surgical intervention could not be recommended without due thought and consideration. The surgical principles involved, therefore, indicate that each case is a law unto itself, but there are, however, certain definite indications for surgical intervention:

1. A persistently lodged foreign body which is shown to be in the same position after repeated x-ray examinations over a period of ten days to two weeks.

2. A foreign body which causes persistent abdominal pain, indicating that it is producing colic in the intestines and if this abdominal pain is associated with failure of progress of the foreign body, then ulceration and perforation are imminent.

3. A foreign body which is lodged in the intestinal tract or in any location where there is associated pain, tenderness and rigidity, thereby indicating that it has penetrated the intestinal wall and is producing local peritonitis.

THE VALUE OF TEAMWORK IN THE REMOVAL OF FOREIGN BODIES

It should be the aim of the surgeon to bring his patient successfully through the operation and to recover the foreign body. This ideal is possible only when we can minimize the length of time of the operation and diminish the amount of operative trauma, or, in other words, when we can expedite localization and smooth removal. It is our policy after localization has been confirmed, to expose the area which contains the foreign body. By this method, 40% of the foreign bodies can be found and removed at once. 60% of the foreign bodies would be missed if we did not make use of the fluoroscope to guide our fingers to the site of lodgment. When the cooperative teamwork between surgeon and roentgenologist is followed, all foreign bodies can be readily removed and the mortality cut to nil. In this series, there was neither mortality nor morbidity in any of the patients. Each of them made an uneventful convalescence.

SURGICAL PROCEDURE

The keynote of surgical success depends upon accurate localization, limited exposure, careful manipulation and speedy extirpation. In order to obtain this ideal result, the following plan is recommended:

Immediately before the patient is placed on the operating table, an x-ray picture is taken to determine the location of the foreign body and to compare this location with the previous x-ray examination.

If the foreign body has moved and there are no indications of peritonitis, then the operation should be postponed and the patient returned to his bed. In event the foreign body is found to be lodged in the same position as shown by the previous x-ray examination, the abdomen should be opened sufficiently to permit the proper packing of the adjacent intestines and to permit the introduction of the fingers, not the whole hand. The area is palpated and if the foreign body is felt, it is grasped with intestinal forceps, then, by manipulation, when the foreign body is found to be in the first or second portion of the duodenum, it can readily be returned into the stomach where removal is accomplished without difficulty and without the risk of producing a narrowing of the duodenum. But, where the foreign body is in the third portion of the duodenum, this procedure is not so easily accomplished, although an effort should be made. I have succeeded in returning one foreign body from the third portion of the duodenum by retrograde manipulation and have removed the foreign body from the stomach. Where it is impossible to return the foreign body from the second portion of the duodenum, the duodenum is opened and the foreign body removed.

When we are unable to palpate the foreign body after the abdomen is opened all hemostats are removed, the patient is immediately taken to the fluoroscopic room. There with the aid of the roentgenologist and his double-plane fluoroscope, he guides our instrument to the foreign body. The foreign body is then grasped in the jaws of the intestinal forceps, the

patient is returned to the operating room and the foreign body is removed according to the plan described above. On one occasion, I had to return the patient to the fluoroscopic room because the foreign body had slipped from the grasp of the forceps in our attempt to return it from the third to the second portion of the duodenum. The patient was again taken to the fluoroscopic room. The foreign body, which was a neck-tie pin, was grasped once more in the third portion of the duodenum and returned to the second portion of the duodenum and there removed.

The removal of foreign bodies from the intestinal tract below the duodenum is not attended with any difficulty and it is questionable in my mind whether it is necessary, unless there is evidence of perforation indicated by peritonitis. A glance at Fig. 17 will give the technic of the procedure.

SUMMARY

Since the surgical principles of removal of foreign bodies are seldom emphasized in individual case reports, we desire to bring out, in a few words, the important factors pertaining to foreign bodies in the gastrointestinal tract.

1. Avoidance of all forms of medication which will stimulate intestinal activity.

2. Special diets are condemned as they are useless.

3. Foreign bodies lodged in the esophagus or situated in the stomach should be referred to the esophagoscopist for removal.

4. When the foreign body is persistently lodged in the duodenum, which is the stumbling block to Nature's passage of these foreign bodies, the case should be observed by a surgeon.

5. Surgical intervention should not be recommended unless it is shown by repeated x-ray examinations, or by evidences of perforation, that the foreign body will not pass.

6. Having traversed the duodeno-jejunal junction, the foreign body usually will make its natural exit without interference.

7. Definite surgical intervention is demanded in persistently lodged foreign bodies and when there is evidence of peritonitis or constant pain.

8. The operative procedure should be limited in its scope. The surgeon should be aided by the roentgenologist. Manual mauling of the abdominal cavity in a search for the foreign body is condemned.

9. Prolonged operations and large incisions produce shock and cause death in children.

Case I—R. K., age 6 weeks, female, white. On October 17, 1935, while mother was pinning garment, child knocked open pin from mother's hand into her own mouth. She did not cough, gag or vomit. Had no symptoms. Pin was three-fourths of an inch long, common steel type, and open. X-rays taken on October 17 and 18 in another hospital revealed the pin in the stomach. The abdominal examination was negative. Patient was

admitted to Jefferson Hospital on November 18, 1935. X-ray examination the following day: "Safety pin, open, in upper abdomen which I thought was practically in stomach, but it is rather posterior and in a vertical direction in the midline, so it may be in the intestines." On the same date, gastroscopy under fluoroscopic guidance seemed to place it definitely outside the stomach. X-ray on November 20th, "Safety pin now clearly outside the stomach. It is far posterior and may be at the duodeno-jejunal junction." On November 21st, the safety pin was shown by x-ray to be in the same position, and operation was performed on November 22nd. By the aid of the bi-plane fluoroscope the pin was located in the third portion of the duodenum and removed therefrom.

Case II—(This case comes under Paulet's classification of "malice"). J. B., aged nine months, was admitted to the Jefferson Hospital, May 20, 1923. Four days before admission the mother noticed that the patient had a slight cough, which was croupy in character. No significance was attached to the cough until two days afterward, when the child vomited a small amount of blood. The family physician was sent for and inquired concerning the possibility of a foreign body having been swallowed. The mother stated that she could not see how such a thing could have been possible. The following day the child had a severe paroxysm of coughing and choking. The mother put her finger in the child's throat, felt and removed a bent pin. Later, a bent pin, a needle and three cigarette butts were vomited. The same day the bowel movement contained two buttons, one bent hair-pin, two closed safety pins, two bent straight pins and several burnt matches. X-ray examination, made by Dr. Manges, disclosed three safety-pins in the pharynx. In the abdomen there was a needle, a straight pin and a slightly bent pin without a head. An esophagoscopy was done on this patient by means of an esophageal speculum, a bunch of pins inbedded in the esophagus just below the cricopharyngeal muscle was removed.

This case emphasizes one of the cardinal principles laid down by Dr. Jackson, viz.: because you have removed one foreign body, do not conclude that there is not another in the same patient. Look and see. You will remember that the x-ray examination disclosed a needle, a straight pin and a slightly bent pin without a head, in the abdomen. Subsequent x-ray examinations made by Dr. Manges disclosed the needle in the midline of the abdomen, but he was unable to say whether it was in the small intestine or colon. The pins had passed. Daily x-ray examinations disclosed the needle to be in the same position after eleven days.

Examination June 17, 1923. Distinct tenderness was detected in the abdomen above the umbilicus and there was some rigidity of the abdominal muscles.

Operation, June 18, 1923. An incision was made a little to the left of the median line. The abdominal contents were inspected. There was a mass, which included the termination of the jejunum and the beginning of the ileum, in the center of which the needle could be palpated. The intes-

tinal adhesions were carefully separated. The needle had penetrated from the duodenum into a loop of the ileum, a portion of the needle being in each gut. The needle was removed. No effort was made to close the small openings in the bowel. There was sufficient inflammatory reaction present to insure rapid closure of the holes made by the needle. The abdomen was closed without drainage. The child made an uneventful recovery. The foreign bodies had been introduced by a malicious neighbor. (Fig. 19)

Case III—T. C., aged nine months. The mother's attention was attracted by the choking and gagging of the child. She noticed blood in the mouth. The child was taken to a neighboring hospital where he was examined by x-ray. From this hospital he was sent to the Jefferson Hospital. Repeated x-ray examinations made by Dr. Manges, showed a wide-open safety-pin in the duodenum. Operation was performed. An incision was made through the right rectus muscle. A thorough search by palpation of the stomach and duodenum was made without locating the foreign body. The child was immediately taken to the fluoroscopic room. There, with the aid of the fluoroscope, the pin could be seen and we were able to feel it. It seemed to me to be in the third portion of the duodenum, with the point caught in the wall of the gut. After a great deal of manipulation I was able to push upon the open pin so as to release it from the wall of the third portion of the duodenum and to pass it into the second portion. The second portion of the duodenum was then incised in its long axis and near its convexity. The open pin was removed. The duodenal opening was closed by a purse-string suture reinforced with Lembert sutures and the abdomen was closed without drainage. Following the operation there was considerable shock but reaction was rapid and the child made a complete recovery.

Case IV—L. O., male, aged eleven months. He was admitted to Jefferson Hospital three days after the mother heard the child choking. She at this time discovered that there was a safety-pin missing from her cushion. She consulted a physician who advised her that an x-ray examination should be made and that the stools should be watched for the passage of the pin. The x-rays disclosed a wide-open safety-pin in the stomach. The child was not apparently suffering any pain which is the rule. Examination of the abdomen did not disclose any mass or any area of tenderness. The pin was observed by the roentgenologist during twelve days. On the twelfth day it was found that it had passed from the duodenum. Two days later it was still retained in the first portion of the duodenum.

Operation—Eighteen days after the accident, under ether anesthesia, an incision was made through the right rectus muscle. The duodenum was exposed and on palpation an open safety-pin could be felt in the first portion of the tube. With some difficulty I was able to close the pin without opening the gut. The closed pin was pushed through the pylorus into the stomach and removed therefrom.

Case V—B. J. F., female, aged thirteen months. Patient admitted December 22, 1932, with a history of having swallowed an open safety-pin on December 19th. The father saw the child swallow the pin, but she did not cough, gag or choke.

On admission the flat plate of the abdomen revealed the safety-pin in the duodenum with the keeper and the point down, the spring up. Three days later the pin was found to be in the same position. Two subsequent x-ray examinations revealed the pin in the same position.

On January 9, 1933, the patient was operated upon, an incision being made in the midline. The peritoneum was opened and the duodenum delivered. The safety-pin was felt in the duodenum, and removed. The patient made an uneventful recovery and was discharged twelve days later.

Case VI—E. W., male, aged two and a half years. Patient was admitted to Jefferson Hospital on November 4, 1931, with a history of having swallowed a bobette pin on October 26th. The child was lying on his mother's bed playing with a bobette pin. He had a sudden attack of choking and the mother ran to him. He told her he had swallowed the pin. A physican was called and the child was sent to a neighboring hospital. There were no bronchoscopic facilities in this hospital and the authorities advised that he be taken to the Jefferson Bronchoscopic Clinic. The family physician, however, insisted upon the child's being studied at the local hospital. X-ray studies were made which revealed the presence of the pin in the stomach. Subsequent x-rays made at two or three day intervals revealed the pin in the same location. The mother was told that the pin had to be removed surgically. She refused to consent to the operation, signing a release. She then brought the child to Jefferson Hospital. Physical examination revealed a slightly distended abdomen with slight rigidity in the right, lower quadrant. No other physical signs.

On November 4, 1931, x-ray study revealed the pin in the second portion of the duodenum with the closed end at the junction of the second and third portions. Two subsequent x-rays revealed the pin in the same position. On November 11, 1931, the child was operated on. A high, right rectus incision was made, the duodenum exposed and the bobette pin palpated through the wall of the duodenum. On examination a fistulous tract was found between the duodenum and the transverse colon. The pin, on manipulation, disappeared from the duodenum and was relocated in the transverse colon. The pin was removed from the transverse colon and the tract between the duodenum and the colon closed. The patient had an uneventful recovery and was discharged from the hospital on November 30. (Fig. 23)

Case VII—M. T., female, aged three years. Child was admitted to the Jefferson Hospital on March 12, 1931, with a history of having swallowed a nail on December 5, 1930. Patient choked and cried and the nail was seen lodged crosswise in the child's throat. In attempting to remove the nail it was swallowed and the child was then brought to the Bronchoscopic

Clinic for observation. X-ray studies revealed the nail to be in the abdomen. During the remainder of the month of December and the early part of January, x-ray studies were made at three-day intervals. All of these examinations showed the foreign body in the same position. The patient was admitted to the hospital on December 26 but the family removed the child on the 28th. Further x-ray studies were carried out but the nail was found still to be in the same position. On March 11, 1931, the child was again returned to the clinic and x-ray examination revealed the nail to be exactly in the same position as before. The patient was operated on March 18th. A right, high rectus incision was made, the duodenum exposed and on palpation the nail was found in the third portion of the duodenum. It was manipulated into the second portion, where a small incision was made and the nail was removed. (Fig. 22)

Case VIII—L. B., female, aged three years, admitted to Jefferson Hospital on June 9, 1933. On that day the child was found choking and it was discovered that a bobby pin placed in her hair was missing. Immediate x-ray revealed the pin in the stomach. Abdominal examination was negative. An x-ray examination on June 10th revealed a bobby pin in the right upper quadrant of the abdomen, probably caught at the duodenal-jejunal junction. On three subsequent x-ray examinations the foreign body was found to be in the same position. At operation on June 16th the bobby pin was found in the second portion of the duodenum, carried through the pylorus into the stomach. The wall was incised anteriorly and the pin removed.

Case IX—B. D., female, white, aged four years. Patient was admitted February 15, 1932, with a history of having swallowed a pin. At five o'clock on the day of admission the child was seen by her mother to place a pin (a straight one with a metal head, about 1¼ inches long) in her mouth. The pin disappeared and the child almost immediately complained of some discomfort on the left side of her neck. Afterwards, she coughed a little but had no severe paroxysms. She was brought to the hospital at once.

X-ray examination on February 16th revealed the pin in the stomach with the point toward the pyloric end and it looked very much as though the point might be imbedded in the mucosa along the greater curvature. On February 17th, the patient was taken to the fluoroscopic room for removal of the pin from the stomach. When examined, the pin was seen in the pelvis. On February 18th, after an enema, the pin was expelled and recovered. However, subsequent examination revealed a portion of a needle somewhere in the gastro-intestinal tract. The x-ray indicated the needle in the right side of the abdomen. The roentgenologist was unable to determine whether it was in the colon or the small intestine. Dr. Manges felt that it was possible that it had penetrated and gone externally to the colon. Two subsequent x-ray studies revealed the foreign body in the same position as previously noted. The patient was anesthetized and placed

under the bi-plane fluoroscope. The needle was located in the upper right quadrant of the abdomen. Incision was made directly under the needle and the needle was found to be imbedded beneath the fascia of the right rectus muscle. The patient was discharged seven days after operation (Feb. 25)

Case X—D. H., female, aged four years. Patient was admitted to the hospital January 8, 1927, with a history of having smallowed a needle on January 6, 1927. The day previous to admission the child was making some doll clothes and placed a needle in her mouth. She swallowed it. No choking or gagging. The mother placed her finger in the patient's mouth and slapped her on the back but was unable to recover the foreign body. On x-ray examination the needle was found in the right upper quadrant of the abdomen. The following day, x-ray examination revealed the needle to be in the second portion of the duodenum and the eye was engaged in the mucous membrane at the junction of the second and third portion of that structure. On January 12th, the patient was operated upon and a right rectus incision made, at which time the needle could not be found in the duodenum. The patient was placed under the fluoroscope which revealed the needle in the third portion of the duodenum. Further examination revealed the needle penetrating the wall of the ascending colon. The needle was removed from the colon and the patient was discharged on February 8th. (Fig. 21)

Case XI—H. G., female, age four years, admitted to Jefferson Hospital on March 3, 1935, with a history of having swallowed a tack two weeks before. No symptoms until the night prior to admission when she developed a cough. The patient had been followed in the Bronchoscopic Outpatient Department. Abdominal examination revealed no tenderness. X-ray examination on February 26th showed a round-headed tack in the lower right quadrant of the abdomen, apparently in the cecum. On March 1st, the x-ray revealed the tack to be in the right iliac fossa. On March 5th, the x-ray examination showed the tack to be in the same position as on February 26th. On March 7th the tack was still seen by x-ray to be in the lower right quadrant. The roentgenologist was able to palpate it and felt reasonably sure that it was imbedded, otherwise it should have gone into the cecum. At operation on March 9th, a lower right rectus incision was made. The appendix was removed and opened but no tack was found. The cecum, ascending colon and terminal ileum manually explored. The bi-plane fluoroscope then located the tack in the upper right abdomen. Here it was found at the hepatic flexure of the colon, moved to a more accessible portion of the ascending colon and removed from within a purse string suture.

Case XII—G. B., female, aged four years, was admitted to Jefferson Hospital on October 20th. The history stated that the patient's older sister was sewing doll clothes on September 21, 1936, and the patient pulled the needle from the thread and swallowed it. She choked and gagged and was taken to Cooper Hospital, Camden, where x-ray examination revealed a needle in the intestines. One week later she returned for examination and

x-ray revealed the foreign body had not changed its position. She was admitted to that hospital and observed until 3 days prior to her admission to our hospital. X-ray examination on October 20th revealed the foreign body to be a full sized needle, apparently outside the duodenum and also outside the colon. It was thought that the point was in the region of the hepatic flexure, for certainly it was outside of the stomach. The roentgenologist thought it a surgical problem. On October 27th another x-ray showed the needle in the upper right quadrant about the same location as before. It was in very close relation to the beginning of the second portion of the duodenum, in fact, it was thought that it might be partly in this portion. At operation on October 28th, the needle was found outside of the gastro-intestinal tract in close relation to the second portion of the duodenum and pancreas, from which site it was removed.

Case XIII—E. R., female, aged twenty-two years. This patient was admitted on August 14, 1934, giving a history that while picking her teeth with a needle, the night before, she swallowed it. She had no symptoms. X-ray examinations on August 14, 15, and 17 showed the needle in the upper abdomen, lying a little to the left of the midline, probably in the stomach. On August 17th removal was attempted under fluoroscopic guidance, but after 28 minutes no needle was found. I operated on this patient on August 20th and by means of the fluoroscope the needle was localized in the cardiac portion of the stomach. The point was forced through the posterior wall. The gastro-hepatic ligament was opened and the needle removed.

Case XIV—N. McN., age thirty-four years, an inmate of an insane asylum. This patient was admitted to Philadelphia General Hospital with a history of having swallowed various foreign bodies with suicidal intent. At this time the patient complained of pain in the right lower quadrant, with tenderness and rigidity. A flat plate x-ray revealed numerous foreign bodies in the gastro-intestinal tract. One safety-pin—open—was lodged in the esophagus about 6 inches above the cardiac end. An effort was made to remove it through an esophagoscope. This failed, however, and since the patient was to have a laporotomy immediately, the esophagoscopist suggested that after that patient was anesthetized, he would again attempt to push the pin into the stomach, aided, of course, by the surgeon. The flat x-ray showed a knife-blade, safety-pins and glass, apparently in the stomach region, In addition to several pins and needles, there was also in the region of the cecum an open safety-pin. In the descending colon other safety-pins were revealed. A midline incision was made in the anterior wall of the stomach and safety-pins, nails, pins, glass and a knife-blade were removed. A needle was felt in the duodenum and, with a hemostat introduced through the pylorus, this needle which was threaded, was removed. An incision was made over the cecal region and one of the safety-pins was found to be perforating the wall of the cecum, producing a local peritonitis. This was removed. Another incision was made over the

descending colon and hair-pins, safety-pins and paper clips were removed. The various incisions were sutured and a Penrose drain placed in the right iliac fossa. The patient's convalescence was normal for five days, after which she developed a bronchial pneumonia and died the following day.

Comment: This case is presented as one of unusual interest, in order to show the various types of foreign bodies swallowed. I am indebted to the late Dr. Harvey Righter for the privilege of presenting it, since it was a case operated on by him at the Philadelphia General Hospital and demonstrates how many of these insane patients amuse themselves. The open safety-pin, show in the upper left hand corner of the photograph, was lodged in the esophagus; the broken needle, to its right, in the duodenum; the knife-blade and hair-pins, open and closed safety-pins, pictured in the center, were removed from the stomach; the open safety-pin, in the lower left-hand corner, had penetrated the cecum. (Fig. 26)

Case XV—This may be classified by the plan of Paulet as one due to "perverted ideas." B. L., female, aged thirty-six years, a lunatic. This patient while an inmate of a hospital for the insane, swallowed a number of foreign bodies. During the process of swallowing a safety-pin, choking and gagging were observed by a nurse. She was sent from a neighboring state to Jefferson Clinic. X-ray examination disclosed an open safety-pin in the esophagus. An open safety-pin, a common pin and a straight pin without a head were seen in the abdomen. The open safety-pin was removed from the esophagus, by peroral esophagoscopy. The abdominal foreign bodies were observed during three weeks by means of the x-ray and the fluoroscope. Twelve days after admission, the open safety-pin was passed per anus. The two straight pins progressed to the large bowel. At the end of the twenty-second day after admission to the hospital, the x-ray disclosed the pins still in the cecum. It was evident that they were not progressing and operation was recommended. At operation a lower right rectus incision was made. The pins were found to be imbedded in the ascending colon, but as yet neither pin had penetrated the peritoneal coat. The pins were pushed through the wall of the bowel and removed. The openings were closed as before described. The patient made an uneventful recovery. (Fig. 20)

Case XVI—H. L., male, aged fifty-six years, was admitted to Jefferson Hospital for a growth involving the right tonsil. During the course of treatment (under local anesthesia) by means of radium needles, it was discovered that one needle containing 12½ mg. of radium was missing. Each needle was threaded with heavy silk as a precaution against swallowing the body. In spite of this, an x-ray examination made by Dr. Manges disclosed the needle in the abdomen a little to the left of the median line and apparently in the small intestine. At the end of twenty-four hours the needle, as observed by the x-rays, was in the same position as on the preceding day. Operation was recommended because of the probable effect of the radium on the tissues of the gastro-intestinal tract.

At operation, an incision was made at the outer edge of the left rectus muscle (under local anesthesia). A careful search of the small intestine failed to reveal the needle. The patient was taken to the fluoroscopic room. There, with the aid of the fluoroscope used by Dr. Manges, I was able to see the needle just below the diaphragm. With some difficulty the needle was grasped and proved to be in the stomach. The stomach was incised on the anterior surface over the eye of the needle. The needle was removed. The incision in the stomach was closed with a purse-string suture and the abdomen was closed without drainage. The patient made an uneventful recovery from the abdominal operation and was discharged from the hospital in three weeks. There were no apparent ill effects from the radium which had been swallowed. Open surgery was performed in this case because gastroscopic procedure was not in vogue at that time.

CONCLUSIONS

4 under 1 year; 8 between 1 and 4 years.

2 insane—1 suicide attempt.

5 accidental in adults.

Cooperation between surgery and roentgenology will yield 100% gastroscopic removal of foreign bodies.

Chairman Highsmith: I wish to thank Dr. Shallow on behalf of the Association for this most excellent presentation. (Applause)

This paper by our guest is not open for general discussion, but I am sure he will be glad to answer any questions that any of you wish to ask.

Our next paper is by Dr. Reeves. It will be presented by his associate, Dr. Vaughan. It is on the x-ray treatment of pituitary adenomas. The discussion will be opened by Dr. Barnes F. Woodhall, who is associated with the Dandy clinic at the Johns Hopkins University in Baltimore, who will discuss the surgical side of the x-ray treatment of pituitary adenomas. He will be followed by Fred Hanes, who will take up the medical side.

We will be glad to hear from Dr. Vaughan.

THE PLACE OF IRRADIATION IN TREATING PITUITARY TUMORS*

W. W. Vaughan, M.D., Durham, N. C.

There is probably no other lesion treated by roentgen rays that shows more dramatic results than those obtained in the treatment of radiosensitive pituitary adenomata. Likewise, the radiologist has no other patient who expresses more profound gratitude and appreciation for his services than the one with a pituitary adenoma who has been restored to an active and useful life after having suffered from impaired vision and headache, so often a result of the disease.

* Data for this discussion was collected from the Surgical clinic and the Department of Roentgenology, Peter Bent Brigham Hospital, Boston, Mass.

In order that we may better understand the development and histology of the three types of adenomata of the pituitary gland, a few words should be said concerning the embryology and cytology of the normal pituitary gland.

The pituitary gland arises from two parts, the stomodeum and under part of the diencephalon. The stomodeum, which is oral ectoderm, arises from the buccal mucosa as an outpocketing which forms Ratke's pouch. It extends upward and backward to make contact with the diencephalic portion and partially surrounds it. The cavity of the pouch is normally obliterated. The sphenoid bone grows in and severs the contact with the buccal cavity. This grossly constitutes the formation of the pituitary gland into its two lobes, that is, the anterior, or adenohypophysis, and the posterior or neurohypophysis. Tumors of the posterior lobe are practically unknown, so, for this discussion, the posterior lobe will not be given further consideration.

The adult gland lies in the sella turcica with the optic chiasm lying just above and anterior on the tuberculum sella. Histologically the anterior lobe is composed of two distinct types of cells, chromophobe and chromophile. The chromophile cells have a large amount of cytoplasm containing numerous coarse granules, and they are further subdivided into two groups: (a) eosinophiles and (b) basophiles. It is the eosinophile cells that give rise to the chromophile adenoma, which is characterized clinically by either gigantism or acromegaly. The basophile cells give rise to basophilic adenomata which presumably is the etiological factor in basophilism, or the Cushing Syndrome. The chromophobe cells, which are considered the mother cells, are characterized by a scanty amount of cytoplasm with no granules and a small, compact nucleus. It is from these cells that the chromophobe adenomata arise. The relative proportion of the different types of cells has been estimated as: chromophobe 52%, chromophile 37%, basophile 11%. The accuracy of this is questioned by some histologists; however, it is true that the chromophobe adenomas are more common than both the other types combined. Theoretically the chromophobe cell should be most radio-sensitive, according to embryological development, but judging from the clinical response, the basophile cell is probably most sensitive.

The signs, symptoms, and clinical features of the eosinophile, chromophobe, and basophile adenomata will be discussed by presenting a case report of each respective adenoma. The first case is that of an eosinophile adenoma.

Case I: Eosinophile adenoma of the pituitary gland with moderately advanced acromegaly. Considered stationary and discharged without treatment. Returned seventeen months later with marked progression of the disease and blind in left eye. Vision returned to normal and maintained six and one half years.

G. R., white male, twenty-nine, first admission to hospital October 20, 1930. Complaints: Came to hospital because army refused him chaplaincy due to acromegalic features. No subjective complaints.

Family History: Father was thick-set, gorilla type, with large hands and feet. Mother and sister also thick-set. Patient had been married three years to a girl who was cardiac invalid. Had no children because contraindicated.

Patient's History: Life long history of excessive perspiration, polydipsia and polyuria. Had noticed a slight increase in size of hands and feet during past three years. No change in libido, no headache or visual disturbances.

Physical Examination: Typical clinical changes of fairly marked acromegaly. Large head, prominent orbital ridges, protruding lower jaw, hypertrophied tongue, slightly bulldog scalp. Broad hands and feet. Coarse skin with excessive perspiration. Chiasmal syndrome absent. Visual fields and acuity normal. B. M. R. +7. Polydipsia 3-4 liters per day.

X-ray examination of the skull showed slight enlargement of the sella turcica; it measured 16x18 mms. There was rather marked enlargement of the paranasal sinuses. The hands and feet showed bony changes characteristic of moderately advanced acromegaly.

Due to the fact that the patient had no subjective complaints he was considered a case of arrested or stationary acromegaly and was discharged without any form of therapy.

March 4, 1932, approximately seventeen months after discharge, the patient was readmitted with a history of sudden onset of severe headache between the eyes eleven days ago with rapid subsequent diminution of vision of the left eye progressing to complete blindness three days ago. The headaches had disappeared. There had been no changes in the polydipsia, polyphagia and acromegalic features.

Physical Examination: Amaurosis of the left eye with absence of reaction to light. Slight contraction of the right visual field in the upper outer quadrant with a paracentral, upper temporal scotoma. Acuity 20/25.

X-ray examination of the skull showed the sella turcica to be much larger than at previous examination. It was irregular and jagged in appearance, making measurements impossible. There had been a slight increase in the length of the metacarpal bones. B. M. R. +3.

Subsequent Course: A series of four roentgen ray treatments, 300 r each, were given over the pituitary gland on successive days beginning March 8, four days after admission. Visual field examination March 10 showed the appearance of a paracentral area in the left upper nasal quadrant in which white, large objects and fingers could be seen. March 11 there was further expansion of the left visual field. Discs as small as 1½ mms. could be used. Visual acuity in the left eye was recorded as 20/100. The right eye was unchanged. March 14 the nasal field of the left eye had filled out to nearly normal and vision was advancing into the

lower temporal quadrant. Visual acuity in the left eye was recorded as 20/30. The right eye was still unchanged. March 28 visual fields showed almost complete return of vision in the left eye was only slight defect in the upper temporal quadrant. Visual acuity in both eyes was 20/20.

Beginning April 22, approximately six weeks after the first roentgen ray treatments were given, the initial series was repeated giving four treatments, 300 r each. Visual fields taken at this time were normal and visual acuity was recorded as 20/15 in both eyes.

The patient has been given three subsequent similar series of roentgen ray treatments. His present condition, six and one half years since the initial examination, is quite satisfactory.

The response of chromophobe adenomata to roentgen ray therapy has been a subject of controversy. Dr. Cushing, in his monograph on intracranial tumors, states that the use of x-ray in the treatment of chromophobe adenomata will be discarded just as it has in treating hyperthyroidism. In the opinion of other observers the chromophobe adenoma is just as radiosensitive as the chromophile. The following case is quite typical of the chromophobe adenoma and exemplifies what may be expected in a certain percentage of these cases.

Case II. Chromophobe adenoma of pituitary gland. Marked hypopituitarism and impaired vision. Roentgen therapy; Asymptomatic 20 months later.

J. H. V., white male, admitted to hospital August 2, 1935. Complaints: Impaired vision, diplopia, and headache.

Family History: Non-contributory.

Personal History: Patient states that eight years ago he began to have rather persistent headaches, frontal in origin. Shortly after the onset of headaches he began to gain weight and increased from an average of 170 pounds to 220 during the following four years. The past two years the headaches had become consistently worse and occasionally been accompanied by diplopia or blurring of vision. Recently there had been marked impairment of energy. Sexual functions had not been altered.

Physical Examination: Showed a well developed, obese, white male in no apparent distress. The skin was of fine texture and moist. There was masculine distribution of hair. There was a sixth cranial nerve palsy on the left.

Visual field examination showed marked contraction of the left with a large central scotoma. There was some contraction of the right visual field in the upper temporal quadrant and a relative central scotoma. Visual acuity, O. S. 20/200, O. D. 20/30-2. X-ray examination of the skull showed the sella turcica to be considerably enlarged, measuring 16x25 mms. There was atrophy of the posterior clinoids and depression of the floor of the sella on the left. B. M. R. —38.

Subsequent Course: A series of nine roentgen ray treatments, 300 r

each, was started August 5. The treatments were given on successive days. Following the first treatment there was loss of headache concomitant with a general feeling of well-being. Re-examination of the visual fields after seven roentgen ray treatments showed considerable expansion of the left and an absence of the previously reported central scotoma. Acuity was O. S. 20/100, O. D. 20/25-2.

Two months later the initial series of roentgen ray treatments were repeated. Visual field examination at this time showed no contraction. Acuity was O. S. 20/30, O. D. 20/20.

The patient at the present time is without complaints and actively engaged in his business. He has had no further roentgen ray therapy. He returns every three months for visual field examinations and a general check-up.

The problem in treating these two types of adenomata is usually quite different. About 90% of the chromophobe adenomata seek medical advice because of visual disturbances, while in the eosinophile groups, less than 45% have visual complaints and they usually visit their physician because of the acromegalic features. Therefore, the objective criterion of improvement is much less in the acromegalic patients, and we must rely, in great measure, on the symptomatic improvement as related by the patient. Rarely is there any regression of the acromegalic features other than a change in the texture of the skin and decrease in the size of the hands and feet, due to loss of edema of the soft tissues. The bony features are stationary. Sexual disturbances such as amenorrhea and impotency are either entirely relieved or greatly improved except in the long standing cases. Such laboratory studies as blood sugar tolerance curves are of great benefit in studying the activity of the disease. It is prolonged in acromegaly, indicating a low sugar tolerance. In the chromophobe adenomas, visual field determinations offer the most valuable objective criterion for progression or regression of the tumor.

Roentgen Ray Technique: The data compiled in the study of 88 chromophobe adenomata and 53 eosinophile adenomata of the pituitary gland suggests that there is no apparent difference in the radio-sensitivity of these two types of tumors. Consequently, the same technique is used for treating them.

Due to the varying susceptibility of different individuals to roentgen ray therapy directed through the brain, with the production of radiation edema, hospitalization is deemed advisable in all cases for the initial series of treatments. Although no untoward results have been noted in this group of patients following x-ray therapy, cases have been reported where an emergency craniotomy was necessary. Therefore, every precaution should be used to safeguard the patient.

Nine treatments, 300 r each, are given in a series on successive days. The following factors are used: 200 KvP, 20 Ma. 2 mm. copper filter, and 50 centimeter distance. This gives an effective wave length of 0.112 Ang-

strom units. Three fields are used, the two temporal areas and the forehead. The treatments are given through a cone 5 centimeters in diameter. This necessitates epilation of only a small area over each temporal region, and usually none over the forehead.

If the tumor is radiosensitive, there is immediate subjective, and shortly thereafter, objective improvement. If there has been no appreciable improvement at the end of two months, the tumor may be considered radio-resistant and surgical intervention considered. If there is improvement following the initial series of treatments, the entire series should be repeated at the end of two months. The subsequent therapy is determined by the status of the patient.

Let us next consider a case of basophilism or the Cushing Syndrome. The etiological factor in this disease is supposedly due to an adenoma arising from the basophile cells of the pituitary gland.

Case III. Advanced basophilism, or Cushing Syndrome, presenting plethoric adiposity, hypertrichosis, acrocyanosis, striae distensiae, hypertension, demineralization of bones and amenorrhea. Complete recovery following roentgen ray therapy.

A. D., white female, 15 years of age, admitted to hospital March 29, 1932. Complaints: Infected pilonidal sinus. Convulsions.

Family History: Non-contributory.

Personal History: At the age of eight years, following an appendectomy, the patient developed a voracious appetite and began to grow fat. At ten years normal menstruation began with rapid acquirement of secondary sex characteristics. She continued to gain weight and at thirteen years weight was 170 pounds, but reduced under diet to 137. In April, 1930, her previously normal menstrual periods suddenly ceased.

Two years prior to admission she had been under the care of a local physician. Pituitary extract was given, the type of which is not known, but the medication made her distinctly worse. December, 1931, she had a sudden convulsion on the street and was taken home unconscious. The patient subsequently attended the Out-patient Department. B. M. R. —33. Dessicated thyroid was given and she was referred to the obesity clinity for further study. February 29, 1932, one month prior to admission to the hospital, she had another convulsion. Glycosuria was discovered following the convulsion.

Physical Examination: Showed a cooperative, intelligent girl complaining of headache and lumbar backache. She was 5 feet high and weighed 132 pounds. There was moderate adiposity, chiefly of the face, neck and trunk. She was definitely round-shouldered. Face was puffy and plethoric with pronounced hirsuites of lips, cheeks and chin associated with definite thinning of hair on the dandruffy scalp. There was a fine growth of hair over the thighs, arms, legs and back. The skin was dry, dusky and scaly with marked acrocyanosis. There were numerous short, purplish

striae present radiating from the groins to the abdomen. There were also numerous reddish striae over the legs.

Accessory findings: B. M. R. —22, blood pressure 140-180 systolic, 110 diastolic. Low sugar tolerance. R. B. C. 4,800,000; W. B. C. 9,400. Hb. 80%, N. P. N. 30.7%. Serum calcium 9.8 mgms. per cent. Serum phosphorus 2.7 mgms. per cent. The calcium output was markedly decreased.

X-ray examination of the skull showed marked demineralization of the bones of the cranial vault. The sella turcica was normal in size and contour. Films of the thoracic and lumbar spine showed marked demineralization of all the vertebra with a moderate amount of kyphosis. There was a pathological fracture of the second lumbar vertebra.

Subsequent Course: Beginning April 21, 1932, the patient was given a series of four roentgen ray treatments, 300 r each, on successive days to alternate temporal regions directed toward the pituitary gland. There was immediate symptomatic improvement with lowering of the blood pressure. The following February, nine months later, there was a return of menses. She has had two subsequent series of x-ray therapy. Her present condition is considered excellent, five years since the initial observation.

We do not want to leave the impression that we believe such dramatic results may be obtained in all cases of pituitary tumors by x-ray therapy as presented in the three cases of this discussion. These cases have been selected to exemplify, in a graphic manner, what may be expected in a certain percentage of cases from x-ray treatments alone. About 20% of the chromophobe as well as the eosinophile adenomata are cystic. Obviously, these are radio-resistant. There is an additional 5-10% that are radio-resistant for no explainable reason. Analysis of 88 cases of chromophobe adenomata and 53 cases of chromophile adenomata has led us to the conclusion that about 70-75% may be controlled by x-ray therapy alone. The prognosis in any individual case is dependent in great measure upon the duration and size of the tumor.

For the initial series of x-ray treatments, hospitalization is obligatory. These patients should be treated only in conjunction with a neuro-surgeon, at least for the initial treatments. Radiation edema, although rare, may occur and necessitate a craniotomy.

The basophilic adenomata are usually micro or macroscopic in size and only rarely are large enough to produce enlargement of the sella turcica, obviating the futility of surgical intervention. The polyglandular symptom complex, as previously pointed out, is due to an alteration in the functional activity of the basophilic cells. This must be treated by some method that will change the function of the individual cells. To this end, the roentgen rays have proven most efficacious.

CONCLUSIONS

1. The three types of adenomata of the pituitary gland can be traced to the three basic cells, i.e., chromophile, basophile and chromophobe.

2. The radiosensitivity of these cells is probably as follows: (a) basophile, (b) eosinophile, (c) chromophobe.

3. Careful follow-up examinations with accurate visual field determinations must be made in each case, except the basophile.

4. Irradiation should be tried in all cases before resorting to surgery.

5. Seventy to seventy-five per cent of the eosinophile and chromophobe tumors can be controlled by irradiation alone.

6. Treat these pituitary tumors only in conjunction with a neurosurgeon.

NOTE: A detailed discussion of this material will be presented in the form of a symposium in the Am. J. of Roent., 1937, by Drs. Elliot C. Cutler, Merrill C. Sosman, Walter W. Vaughan, and Max T. Schnitker.

CHAIRMAN HIGHSMITH: The discussion will be opened by Dr. Barnes Woodhall!

DR. BARNES WOODHALL (Baltimore, Md.): Mr. Chairman, Ladies and Gentlemen: Dr. Deryl Hart asked me a few weeks ago in Durham, to take his place in the discussion of Dr. Vaughan's paper this afternoon. I had the privilege at that time of seeing Dr. Vaughan's exhibit, and I accepted with pleasure, because I feel that his work illustrates again a very hopeful therapeutic adjunct in the sometimes rather discouraging treatment of pituitary tumors.

Since the inception of this type of therapy in the treatment of intracranial tumors, some twenty-odd years ago, we have become familiar with the fact that two general groups of tumors can be treated favorably by x-ray therapy. The first group includes those gliomas of the brain that arise from the more embryonic cells such as the medullar blastomas.

For instance, we have fourteen such tumors undergoing x-ray treatment in our clinic at the present time. There is no doubt that this type of therapy definitely prolongs the duration of life.

The second group of tumors which react favorably to x-ray therapy include those tumors we are discussing this afternoon, pituitary tumors.

I feel sure that with the increase in technique improvement, and with perhaps the direct application of this therapy to tumors exposed to operation, in the future we may see even more hopeful results in these and other tumors. However, being trained as a neuro-surgeon in the operative procedure, I cannot find myself in complete accord with Dr. Vaughan's conclusions, all of them. If I did find myself in complete accord with him I feel quite sure a great part of my practice might be given over to the roentgenologist.

We are all familiar with the fact, and I think it has been well recognized, that the tumors arising from basophilic cells may be satisfactorily

treated by x-ray therapy. This has been very well and graphically illustrated by Dr. Vaughan's case this afternoon. On pathological study these tumors are very small. Their effect is humoral rather than local destruction of tissue, and I am sure that no surgeon would care to attack them.

I also think it is fairly well recognized, as Dr. Vaughan has pointed out, that a good many of the acromegalic individuals, those with tumors arising from the eosinophilic type of cell, may also be treated satisfactorily by x-ray therapy.

These tumors may be small, but often attain a large size. Their rate of growth is also variable and often becomes arrested, so that, as Dr. Vaughan has pointed out, neither x-ray nor surgical intervention is indicated. However, we feel that when these tumors attain a great enough size to cause what Dr. Cushing called "neighborhood symptoms," that is, optic atrophy, pressure upon either the Aqueduct Sylvius or the Foramen Monro causing increased intracranial pressure, or cause ..... attacks, then these patients should be explored surgically.

Of course, it is well recognized that acromegalic individuals do not react well to operation, and the mortality, ranging between 14 and 16 per cent, is some two or three times higher than it is in chromophobe adenomas. It certainly is a moot point and deserves much more study and many more case reports.

There are three groups of pituitary tumors which comprise by far the greater number of pituitary tumors over which our discussion may become much more warm. The first group comprise the chromophobe adenomas of the pituitary, which comprise about 70 to 75 per cent of all tumors. These tumors may be small, although they often attain large size. Their rate of growth too is variable. We feel, and I have been taught by a master of surgery of pituitary tumors, that all of these tumors should be attacked surgically, for the following reasons: First, we feel that it takes, in some cases at least, a great deal of diagnostic acumen to separate these from some tumors that I shall describe later, and a great deal of cooperation between the roentgenologist and the neuro-surgeon to decide exactly which tumors should be irradiated.

In the second place, it is our purpose, if possible, to cure the patient of his tumor. And I have a feeling that x-ray therapy cannot accomplish this, and that surgery can.

In the third place, when neighborhood symptoms intervene, optic atrophy, papilledema, signs of increased pressure, we feel that the time for x-ray therapy has passed, and that surgical intervention must take place to preserve existing vision, and preserve life, because we have become familiar—all of you have—with the fact that in cases of increased intracranial pressure, vision in an optic nerve may disappear almost instantly. I have seen a few cases like that, as anybody has who has worked in a neuro-surgical clinic. The vision not only completely disappears, but the loss is permanent.

It is well to recognize that in cases of increased intracranial pressure, an operation is much more hazardous the longer one allows the intracranial pressure to persist.

The second group of pituitary tumors are those commonly called cranio-pharyngeals or hypophyseal duct cysts. These tumors comprise fully 20 per cent of the total number of all pituitary tumors. They are highly resistant to x-ray therapy, but are quite amenable to surgical intervention.

I had some slides I wished to show, because in quick conclusion I feel that it is hard to differentiate these hypophyseal duct cysts from the other types of tumors.

These hypophyseal duct tumors are cystic and are quite amenable to surgical intervention. About fifty per cent of them can be diagnosed clinically, but I defy any neurologist, sometimes, to separate them from the adenomas of chromophobe origin. I do not think it is safe in a good many cases to allow primary x-ray treatment.

I will dispense with the showing of these slides. They are simply slides of three cranial pharyngeal cysts that were cured very easily by operation.

We must remember that along with the advance in roentgen ray therapy, the surgeons have not been careless, and they too have been making strides in the operative treatment of these tumors. I simply call to your attention that the modern lateral frontal intradural approach is extremely flexible. It allows one to visualize the tumors perfectly. If necessary, a portion of the frontal lobe or the entire frontal lobe can be resected to attack the large tumors that cause intracranial pressure.

Thank you very much! (Applause)

CHAIRMAN HIGHSMITH: Dr. Hanes!

DR. FRED HANES (Durham): Mr. Chairman, we have listened to two very interesting talks on the therapy of hypophyseal lesions, and hypophyseal tumors. From the very nature of the lesion, namely, a tumor, we can't say now, and probably never will be able to say much that is helpful from the standpoint of purely medical therapy.

Most of the diseases that are called to our attention from the standpoint of diagnosis are due to hypersecretion. Where that is the case, we can only act to diminish the amount of secretion. So, medically, we are not called upon to attempt to treat such tumors. They are purely surgical problems.

There is one form, though, of pituitary disorder which every medical man, especially the general practitioner, is called upon to give some opinion about. That is the type of dyscrasia which is characterized by what we believe to be a lack of pituitary secretion, resulting in the production of the fat boys and fat girls and that we are all so familiar with, the so-called Frohlich's syndrome, of genital atrophy combined with excessive adiposity.

There, if our thinking is correct, we believe that we are dealing with a deficiency which is comparable to thyroid deficiency producing myxedema or Cretinism. How often we see patients who we realize at one time in their lives have been acromegalics. The process has ceased, merely leaving prognathism and a heavy ridged face, but the patient could not be said to have acromegaly. Following the principle that Dr. Cushing laid down, that there are waves of secretion of the pituitary gland, these fat boys probably represent waves of under-secretion. Therefore medically, one would think that they would be susceptible to treatment.

There is, however, very little use in talking about medical treatment until we are better orientated as to hypophyseal substances than we are at present. The common "antuitrins" that are put out are nothing but soups made out of hypophysis. They are in no sense specific. They contain all of the hormones of the hypophysis and the trouble is that if you treat a patient with a growth hormone, if you try to influence the growth of a pituitary dwarf, you may at the same time be introducing a gonadotropic hormone and producing early sexual development.

Therefore, medically, I am afraid we have to wait and say very little. This is a purely surgical problem at present and it has been most interestingly discussed today from the standpoint of surgery and x-ray.

I do want to say one word about the diagnosis of pituitary basophilism of Cushing which has swept the country. About four years ago a patient was admitted to Duke Hospital, fulfilling every single requirement, to the minutest detail, of Cushing's syndrome. The medical house officer who saw the patient in the Out-Patient Department, not being familiar with Dr. Cushing's work, which had just been published, sent the patient in with a diagnosis of adrenal tumor. One of our very enthusiastic residents, who had read the paper and seen the case, immediately sold the case to everybody in the hospital as an instance of basophilism. She was a nurse and cooperated in careful study until her death. At the autopsy the hypophysis was found to be absolutely normal in every possible way, and the woman had a large adrenal tumor.

We must realize that you cannot possibly make the distinction between hypophysis and adrenal by any clinical means we know. I do strongly sound a note of warning to those who study such cases as basophilism, that, in conjunction with a good surgeon and especially a genito-urinary man, every attempt be made to include in your differential diagnosis a possible adrenal tumor, *because such conditions are operable.* Patients who have adrenal tumors may be cured. Certainly I think that the patient we studied with such gusto and enthusiasm might have been saved had we given more consideration to the diagnosis of adrenal tumor instead of rushing over to the diagnosis of basophilism.

I think what I have to say should really have been said to the ophthalmologists and general practitioners, and not to the surgeons, because the patients we see that distress us most are the people who come in with

blindness. In any patient who has any suspicion whatsoever of an intracranial lesion, our real diagnostic efforts should be devoted to a study of the man's eyes. You too, as surgeons, see people who, for years, have been fitted with glasses because the disease didn't produce the signs of intracranial tumor. Injuries in the region of the sella turcica have not been thought of and the patient's eyesight is hopelessly lost. (Applause)

CHAIRMAN HIGHSMITH: The paper is open for general discussion.

DR. BRENIZER: Let Dr. Woodhall show his pictures, please. He has five minutes.

CHAIRMAN HIGHSMITH: All right.

Dr. Woodhall!

DR. WOODHALL (Johns Hopkins Hospital): I brought this along because of two reasons. One is that it is of extreme historical interest. It is one of the first hypophyseal duct cysts described by Hurdin in about 1906. It illustrates very well how rapidly these tumors grow, and how far they extend posteriorly along the base of the brain. I must say it also illustrates how ineffective x-ray therapy would be, in a cystic tumor of this character. Of course it is our thought that basically you should differentiate these tumors before either primary or x-ray treatment is done, or surgery is advised.

(Slide) This is a tumor from a more recent case. It shows a very typical duct cyst, which has progressed upwards to obliterate the foramen Monro, and also posteriorly to obliterate the Aqueduct Sylvius, causing increased signs and intracranial pressure. Dr. Daniel removed this tumor completely. That is, I grant, a great statement to make, but I saw it removed, and it is possible to treat such tumors.

(Slide) This is a similar tumor and one can see that the situation is reversed now. In the other case we have a normal hypophysis or a normal sella turcica. In this case the sella turcica is enlarged and destroyed. It simply illustrates some of the difficulties one encounters in differential diagnosis in these cases.

(Slide) This is a very interesting and rather rare section given to me by Dr. Dean Lewis. It is a section of a mouteplenian found at the anterior lobe of a normal hypophysis. It probably represents the source of these tumors in young adults. By the way, it is good proof of ..... theory of the formation of tumors.

Thank you very much! (Applause)

CHAIRMAN HIGHSMITH: Dr. Vaughan!

DR. VAUGHAN: I want to thank Dr. Hanes and Dr. Woodhall for their discussions.

In regard to the diagnosis of these pituitary tumors, in connection with what Dr. Woodhall said, our experience has been this: That in these radiosensitive pituitary adenomas there is enough response during an interval

of two or three weeks to indicate that the tumor is a radio-sensitive adenoma.

This response may be shown in two ways. It may be by expansion of visual fields, or it may be by symptomatic improvement. So I disagree with Dr. Woodhall on that one point. That is, I think that every patient who has an enlargement of the sella turcica, unless he does have markedly increased intracranial pressure, should be given the benefit of a therapeutic dose of irradiation, and I want to emphasize again, only in conjunction with a competent neuro-surgeon, because sometimes you do get radiation edema, and an emergency craniotomy is necessary.

In regard to what Dr. Hanes said about the differential diagnosis, in basophilic adenomas: We suggest for a differential diagnosis a trial dose of x-ray over the pituitary gland. Unless you are absolutely certain that it is a superadrenal adenoma, give the patient a therapeutic trial dose of the radiation. These basophilic adenomas are so radio-sensitive that the response will be such that you can come to a definite diagnosis very shortly thereafter. By that I mean within three or four weeks, anyway.

Thank you! (Applause)

Chairman Highsmith: I want to thank the doctors for this most excellent presentation.

The next paper on the program is by Dr. N. P. Battle of Rocky Mount, "Traumatic Injuries to the Head." The discussion will be opened by Dr. Roy McKnight of Charlotte.

Dr. Battle!

. . . Dr. Battle then presented his prepared paper. . . (Applause)

TRAUMATIC INJURIES TO THE HEAD

A Study of 200 Consecutive Cases

By Dr. Newsom P. Battle, B.S., M.D., F.A.C.S.
Boice-Willis Clinic, Park View Hospital, Rocky Mount, N. C.

The problem of traumatic injuries to the head necessarily includes injuries of the scalp, skull, and the brain with its membranes and blood vessels. These injuries are produced in various ways. Violence is the outstanding feature. Figure No. 1 presents this series from an etiological aspect and at the same time indicates the degree of associated violence.

Figure No. 1

Etiology 200 cases

Auto 123 (21 died)	Bicycle hit head 2
Manual violence 23 (2 died)	Water tank explosion 1 (1 died)
Mule kick 6 (1 died)	Accidental rifle shot 1 (1 died)
Falls 6 (1 died)	Baseball 2
Falls from mule or horse 3	Wagon tongue hit head 1
Motorcycle 2 (1 died)	Hit head on shelf 1
Industrial accident 2	

Scalp and skull injuries unassociated with intracranial involvement are to be considered chiefly from the standpoint of prevention of subsequent invasion of infection into the cranial cavity. The danger of the simple scalp wound lies in its apparent insignificance.[1] Every injury to the head should be thought of as being serious until it can be proven otherwise. A careful history should always be taken including the manner of the injury and the state of consciousness following the accident. The repair of the wound should also include an investigation of the underlying structures for foreign bodies and for damage to the periosteum and skull. In the absence of skull or intracranial disturbance the potentially infected wound should be converted into a surgical wound by careful cleansing and debridement, and closed with or without drainage, depending upon its extensiveness. In the preparation of scalp wounds for repair one does well to remember that the patient, in spite of her beauty, can grow hair with greater facility than she can combat infection.

Five (5) of the 200 cases were admitted to the hospital for scalp wounds.

FIGURE No. 2

Skull fractures 102
- 30 suspected skull fractures
- 72 proved by x-ray, operation, or aural bleeding
  - Of these 72, there were:
    - 11 without cerebral damage
    - 20 with cerebral hemorrhage
    - 14 with gross brain damage
    - 23 basal
    - 48 vault
    - 8 frontal sinus
    - 10 suture line upset
      - Compound skull fractures 36
        - (13 died, 9 sequellae)
        - basal 16, vault 18, sinus 5
      - Depressed 22. 5 died, 3 sequellae
        - Compound 13
        - Operated 13
      - Parietal 21. 5 died, 9 sequellae
      - Temporal 9. 3 died, 1 sequellae
      - Occipital 6. no deaths or seq.
      - Frontal 26. 6 died, 10 seq.

Simple linear fractures of the vault unassociated with scalp and intracranial injuries are probably no more dangerous than fractures of other bones. The occurrence of uncomplicated linear fractures is shown in Figure No. 3.

FIGURE No. 3

Linear Fractures 13
- No deaths
- 8 sequellae (61.5%)
- 1 without intracranial damage
- 12 with intracranial damage
  - 7 of these 12 had sequellae

Linear fractures of the temporal bone have as their principal danger, provided that they do not extend into the base, the possibility of a rupture of the middle meningeal artery or some of its branches.

Simple depressed fractures, not of the massive type sufficient to produce compression per se, are of importance depending upon their locality, i.e., a depressed fracture over a silent area of the cortex may be insignificant, while a depressed fracture over the motor area may present an entirely different picture.

Compound depressed fractures of the skull are frequently associated with injuries to the membranes, brain, or both. The question of hemorrhage, actual brain destruction, and infection add to the gravity of these injuries, as does their location. Figure No. 4 shows such an injury. The termination of this case was death.

FIGURE No. 4
X-Ray Plate

While Figure No. 5 shows extensive bone and brain destruction of the frontal area, this patient recovered without sequellae.

FIGURE No. 5
X-Ray Plate

Basal fractures are usually compound and are dangerous because they present open avenues to intracranial infection through the ears, nose, mouth and sinuses, in addition to blood vessel damage with resulting hemorrhage. Figure No. 6 indicates that hemorrhage and brain damage and not infection have been largely responsible for the deaths in this series.

FIGURE No. 6

Basal Skull Fractures 41
- 18 suspected
- 23 proved

Of the 41 basal skull fractures:
- 24 died (58.5%-corrected mortality of 44.1%)
- 6 had gross brain damage
- 17 had cerebral hemorrhage
- 16 compound
- 7 had sequellae
  - 3 of these slightly deaf
  - no meningitis
  - no rhinorrhea

While these statistics show that there is a definite relationship between skull fracture and severe brain damage, it must be borne in mind that "a fatal termination may ensue in consequence of cerebral damage, in the absence of bone injury, or wound of scalp."[2]

FIGURE No. 7
X-Ray Plate

Rupture of superior longitudinal sinus. Bilateral subdural hemorrhage. Death—14 hours. Struck over vertex with axe helm by drunken man.

Extradura hemorrhage, "the thief in the night of traumatic head injuries," does not offer a great deal of difficulty from a diagnostic standpoint when the symptoms are atypical. Verbrugghen[3] reports that in about 10% of the cases coming to autopsy, extradural hemorrhage is regarded as the principal cause of death. In some cases there is no "lucid interval." The unilateral dilatation of the pupil occurs after a primary contraction of the pupil when it is due to extradural hemorrhage, and when the patient is seen late, both pupils may be equally dilated. Unilateral dilatation of the pupil, present from the moment of injury, is caused by a damage to the third nerve. Progressive coma and descending contralateral convulsions, spasticity and paralysis, are thought to be the most reliable diagnostic signs of this condition.

That the occurrence of this injury is not dependent upon the presence of a skull fracture, or a torn dura, was demonstrated by the author in the performancy of a medico legal autopsy.

Middle meningeal hemorrhage, depressed fractures, compound or not subdural hematoma, and scalp lacerations require surgical treatment Figure No. 8 gives the number of cases operated upon and the type of operation performed.

FIGURE N o. 8

Surgical treatment of head injuries: 19 cases
- Raise bone 9
  - of these:
    - 1 active hemorrhage checked
    - 2 subdural clots removed
    - 3 brain irrigations
- Removal of depressed bone 5
  - 1 irrigation of brain
- Debridement of brain 1
- Craniotomy to control hemorrhage 1
  - 1 to explore for abscess
  - 1 to remove blood clot

The importance of the correct management of scalp lacerations per se is well recognized but will be omitted in order to give more consideration to craniocerebral injuries.

Shock is generally present to some degree in craniocerebral injuries and demands immediate intelligent attention less the patient die before the injury can be treated. Heat is the most effective single method.[4] In combatting low blood volume in shocked head cases it is to be remembered that there will be edema of the brain following the shock. Hypertonic glucose, or preferably sucrose, 50 cc. of 50%, will replace the volume. Acacia and blood should be used if necessary. Stimulants are best omitted unless hemorrhage can be excluded. "Recovery from shock without hemorrhage is usually prompt unless the injury is so severe that death occurs in a short time."[4] Hemorrhage, extracranial, must be checked while the shock is being treated.

Compound fractures of the skull, with or without depression, where there are spicules of bone, dirt, etc., require operation as soon as the shock has been combatted. Debridement is the procedure. Where possible, skull fragments are replaced.

Elmer, R. F., and Boylan, C. E.,[5] state that "rapid immediate decompression with adequate supportive treatment is the procedure of choice in children with depressed fractures." This has been our experience.

One of the cases listed in this series was operated for subdural hematoma. The operation was performed two weeks after his injury when he was admitted into the hospital in a state of rapidly progressive coma. The operation consisted of saline irrigation through trephine openings. Bilateral exploration of the dura was performed. See Figure No. 9. (Was taken 1 year after recovery.)

FIGURE No. 9
X-Ray Plate

None of the cases in this series received a subtemporal decompression for the relief of increased intracranial pressure.

Hemorrhage for a ruptured middle meningeal artery should be checked as soon as it is diagnosed. The treatment is surgical.[6]

X-ray examinations should not be considered early in the treatment of these injuries. This should be postponed until the patient is out of danger, except in some cases where there is a question of extradural hemorrhage.[7] A positive x-ray finding of a linear fracture crossing the path of the middle meningeal artery, or its branches, may be of use and therefore excusable in instances of this kind.

As long as the patient with a depressed fracture, or bloody spinal fluid, is holding his own, or is showing improvement under treatment, operation should be postponed for a few days. The patient will have a better chance for recovery.

The postoperative treatment is largely that of combatting increased intracranial pressure. Of 200 cases, 176 were classified as non-surgical. These varied in seriousness from momentary loss of consciousness with apparent complete recovery in a few hours, up to prolonged unconsciousness, two weeks in one instance, with definite evidence of severe structural damage. Many of this group had injuries to other parts of the body.

Those unconscious for less than thirty minutes were considered, from an intracranial standpoint, as cases of mild concussion. These were hospitalized for a period which averaged 4.1 days. Figure No. 10 outlines their treatment.

FIGURE No. 10

176 non-surgical cases
- 74 of these were mild concussion
  - 55 treated by observation
    - 7 sequellae
  - 19 treated by dehydration
    - 7 sequellae

12 also had corporal fractures
1 also had a ruptured hollow viscus
(No deaths in the mild concussion group)
Under observation is included frequent recordings of B. P., T. P. R.

Some of these cases were concussions as defined by Munro,[7] i.e., "a mechanical derangement of molecules within the nerve cells causing momentary loss of function," while the others must have had mild, but definite brain damage, possibly slight edema and congested. The occurrence of sequellae in 19.2% suggests this.

Fifty (50) patients were admitted to the hospital in an unconscious state. These offered the greatest problem. Concussion, delirium, aphasia, stupor, all with or without shock and hemorrhage, were present in this group. Twenty-one had additional injuries.

In evaluating these cases the degree of consciousness is perhaps the most valuable single observation.[6 7] A differentiation between stupor and aphasia is important. Loss of sphincteric control and the presence or absence of the various reflexes are of prognostic value. Negative symptoms are just as important as positive symptoms in that they aid the observer to follow the progress of the case more intelligently. "Hemiplegia and monoplegia, when caused by depressed skull fractures, are present from the moment of injury."[8] The relationship between pulse pressure and pulse rate should be recorded at frequent intervals. These observations, together with a spinal fluid pressure reading, give more information regarding the intracranial state than does the x-ray. A study of the eye-grounds is useful after the first twenty-four hours.

The treatment of the unconscious patient should begin from the moment he arrives at the hospital, or ideally as soon as the physician arrives at the side of the patient. Peace and quiet are needed. He should be placed in a warm flat bed, with his clothes on if necessary. To recapitulate shock is the first consideration. Patients presenting pulmonary edema or who are bleeding from the nose or mouth should be turned on their abdomen and have a pillow placed under one shoulder. At the same time the foot of the bed is elevated to facilitate postural drainage. Treatment based on the assumption that "death from a head injury . . . . . is due to changes brought about in the physiological relationship within the cranial cavity"[9] is instituted. Increased intracranial pressure, if carried far enough, produces cell death by anoxemia, and anoxemia occurs when the diastolic pressure reaches 40 m.m. of mercury.[10] The patient not infrequently loses or wins his fight during the first 24 hours. Every effort should be made to keep the patient going, by helping nature with her heavy burden until she can carry on unassisted. The diastolic blood pressure must be kept up and the intracranial pressure must be kept down. Drugs, the continuance of which might be harmful later on, hypertonic fluids, etc., are permissible during this period. Oxygen through a nasal catheter, sponges for fever and

other such treatments may be life-saving. While these treatments are under way, such minor details as bleeding ears may be attended to, lest they give trouble later on. Figure No. 11 shows the methods used and the results obtained in this series of cases.

FIGURE No. 11

Non-surgical treatment of severe
head injuries. 93 cases
52.7% observation (49 cases)
30.6% mortality (corrected 20.9%)
25.5% sequellae
12.9% lumbar puncture alone (12 cases)
41.7% mortality (corrected 27.3%)
41.7% sequellae
14.0% dehydration alone (13 cases)
15.4% mortality (corrected 7.7%)
53 8% sequellae
Of 15 cases treated by repeated lumbar
puncture and dehydration:
13.3% mortality (no corrections)
40.0% sequellae

Intravenous hypertonic glucose solution was used for dehydration in only a few instances. Dehydration and repeated lumbar punctures were found to be more effective than the other types of treatment mentioned.

Fay's addage, "when the pulse pressure approaches the pulse rate, that is the time to dehydrate,"[10] has been followed in preference to the old adage, "if pulse pressure crosses the pulse rate, that is the time to decompress." The treatment of our recent cases has largely followed the teachings of Fay. Dehydration when carried too far produces a toxic dehydration.[11] A fat person can stand more dehydration than can a thin person.

Repeated lumbar punctures have been performed upon cases presenting bloody spinal fluid on the grounds that the red blood cells produce arachnoiditis with subsequent blockage of the arachnoid pathways and filter.[12] Those cases found to have an increased intracranial pressure at the time the diagnostic tap have also had repeated punctures for the purpose of reducing intracranial pressure.

Sucrose, 50% in 50 cc. doses, has been used in two cases, one of which was definitely benefited by its use. The late elevation of intracranial pressure seen following the intravenous use of hypertonic glucose has been shown by Masserman[13] not to occur after the use of sucrose, his argument being based upon the fact that sucrose is not extracted from the circulation into the tissues, and that it induces a marked diuresis. While Hahn et al have found from clinical experience with 25 cases of acute brain injury the 50% sucrose given intravenously replaces glucose for osmotic therapy.[14]

The problem of sedation is sometimes great. When possible the bromides, barbiturates, and paraldehyde should be used and not opiates. We have considered morphia and H. M. C. necessary in some instances. A part

of the objections to this drug can be overcome if the patient is carefully watched.

From the standpoint of prognosis the following conditions with their results are shown.

FIGURE No. 12

Prognosis as evidenced by the death rates of the following conditions:

- Convulsions on admission 40%
  - (10 cases, 4 died)
- Unconscious on admission 40%
  - (50 cases, 20 died)
- Aural bleeding 47.1%
  - right 66.7%
  - left 33.3%
  - bilateral 50%
  - (17 cases aural bleeding, 8 died)
- Fractured skulls 30.3%
  - (102 cases, 31 died)
  - sequellae 32.4%
- Bloody spinal fluid 48.0%
  - (25 cases, 12 died)
  - sequellae 28.0%

The incidence and type of sequellae are shown in Figure No. 13.

FIGURE No. 13

74 cases followed after discharge

- 28.4% well (21 cases)
- 71.6% had sequellae (53 cases)
  - mild sequellae 25 cases
  - moderate sequellae 6 cases
  - severe sequellae 22 cases

mild sequellae evidenced by headache, dizziness, or slight nervousness.

Moderate sequellae evidenced by irritability, loss of enthusiasm.

Severe sequellae evidenced by personality change, convulsions, blindness, insanity, etc.

Figure No. 14 shows the mortality rates, corrected and uncorrected. The corrected mortality rate excludes non-cerebral deaths and deaths occurring under three hours. The further corrected mortality rate excludes deaths occurring in the first 24 hours.

FIGURE No. 14

Mortality rates		Corrected	Further Corrected
for 200 cases	16.0%	9.9%	4.9%
Past 2 years (113 cases)	12.4%	8.0%	4.7%
Mild head injuries 90 cases		0	
Severe head injuries			

(110 cases)	29.1%	18.8%	10.9%
Past 2 years (55 cases)	25.5%	17.0%	10.2%

Mortality according to age

under 12	13-31	22-35	35-50	over 50
11.9%	8.7%	14.3%	21.9%	30.4%

SUMMARY

1. A series of 200 cases of head injury has been studied.

2. The treatment has consisted of 19 surgical and 181 non-surgical.

3. The lowest mortality, in the seriously injured, occurred in the cases treated by repeated lumbar punctures and dehydration.

4. The most severe sequellae occurred in those cases having the most serious injuries.

5. The mortality can be reduced by the application of therapy based on physiological principles and careful bedside observation.

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Dr. R. B. McKnight (Charlotte): Mr. Chairman: In this day of reckless speed, fast automobiles and uncontrolled liquor, the subject brought before us by Dr. Battle is most timely.

. I find myself in the position like Mose who was arguing with Rastus concerning the thoroughness of their respective knowledge. Mose says to Rastus: "Why, ah bets you a thin dime you can't even name the bestest thing what is!" "Ah takes that bet," says Rastus. "The bestest thing what is am fish, watermelon and love." Mose thought for a few minutes and then replied: "You wins the bet, Big Boy, 'cause you ain't left me nothin' to say."

Dr. Battle has covered the subject well and has left very little for one to say. Instead of reading a prepared discussion, I shall make a few rambling remarks gleaned from observations on a series of skull injuries with varying degrees of brain trauma I have seen in my own practice over a period of nine years.

Crushing injuries of the frontal plates are frequently seen with an alarming loss of brain tissue. It is remarkable the great amount of brain tissue that can be lost and the patient recover with few or no symptoms! I recall one patient under my observation and treatment who had lost at least two ounces of brain tissue. He had a large depressed fracture of the left frontal bone and underneath this developed a brain abscess. Conservative local treatment and moderate dehydration were employed for several weeks and then drainage of the abscess, elevation of the depression and removal of sequestra were performed. He made a perfectly normal recovery.

The size or extent of the skull fracture is not necessarily an indication to the degree of trauma to the brain. I recall one little fellow—about eight years of age—who fell headfirst about ten feet against the cement sidewalk. He received an extensive linear fracture of the left parietal and occipital bones with separation of the fracture edges to a quarter of an inch. His parents were quite unintelligent persons and insisted on taking him home from the hospital. The seriousness of the condition made no impression on them, so they signed a release and left. On visiting the home a day or two later, I was informed the child was out playing and his whereabouts was not known! I saw him a number of times during the next two or three months, playing in the street.

The question of surgery in these cases is most important. I am glad that I did not hear Dr. Battle mention subtemporal decompression. That used to be almost a routine in skull injuries and resulted in an alarming death rate. Today it is a rarely performed operation. I think surgical procedures can be divided into four groups, depending largely on the time element. (1) There is rarely, if ever, any indication for *immediate surgery*. These patients are usually in a state of shock and they may be bleeding profusely. Other than immediate clamping or tying off an artery, they are better left alone and the shock combatted. (2) After some six to twelve hours, when the shock has been successfully handled, debridement and scalp suture may be done. If the middle meningeal artery is bleeding and we have sense enough to diagnose it—I must confess I cannot with any degree of certainty—then trephine and ligation of the artery is, of course, indicated.

We may refer to this phase of surgery as *moderately delayed surgery.* (3) *Delayed surgery* may consist of elevation of depressed fractures causing pressure against the brain, especially over the motor areas. Perhaps a brain abscess will develop necessitating evacuation or drainage, or sequestra may have to be removed. Generally speaking a week or more should elapse before such operative intervention. (4) Sometimes we are called upon to do *greatly delayed surgery.* Months or years subsequently it may be necessary to open a skull to remove a spicule of bone or an old clot, elevate an overlooked depressed fracture or correct some other condition for the symptoms of Jacksonian epilepsy. It should be remembered, however, that the majority of head injuries this day and time are not surgical problems other than minor suturing and debridement.

The general plan of treatment I have used is (time called) (Applause)

Chairman Highsmith: The paper is now open for general discussion. Is there any further discussion of Dr. Battle's paper?

Dr. George W. Holmes (Winston-Salem): I should like to ask Dr. Battle what condition contraindicates a spinal puncture in these traumatic cases?

Chairman Highsmith: Is there any further discussion?

Dr. Rigdon O. Dees (Greensboro): I move Dr. McKnight be allowed another minute to tell what his treatment consists of.

Chairman Highsmith: Dr. McKnight will be granted another minute.

Dr. McKnight: Thank you. My treatment in these cases has been dehydration therapy from the start. As you all know there are two schools of thought about this. Temple Fay of Philadelphia is the leader of the dehydration idea and I am just exactly one hundred per cent sold on his method. He reports a mortality and morbidity which is well under any other large series of cases reported by those doing neurological surgery and who do not hold to the dehydration theory. In my own series of about forty skull fractures, there have been only three deaths. This series does not include scalp lacerations with no evidence of brain trauma and negative roentgenograms.

An intelligent watchfulness must be maintained because dehydration can be carried to a point where a toxic dehydration will ensue. I use hypertonic saline by bowel, hypertonic glucose—preferably sucrose—intravenously, restrict hypo- or isotonic fluids for several hours to a few days or longer and keep the patient quiet. Barbiturates have been of value in my hands. I had one little girl who was unconscious for six weeks. Moderate dehydration was cautiously employed for the entire time. She recovered from the most extensive skull fracture in a child I have ever seen and is apparently well today—over two years after her accident. I do not hesitate to use lumbar puncture, especially if there is the slightest evidence of intracranial bleeding or increased intracranial pressure. Undoubtedly oxygen therapy (preferably the tent to the nasal catheter) has saved many

of these victims. I intended to discuss briefly the physiology of dehydration, lumbar puncture and oxygen, but will have to refer you to Dr. Fay's excellent article in the *Annals of Surgery* some six or seven years ago. I know we all enjoyed Dr. Battle's excellent paper.

Dr. Battle: With regard to the spinal puncture, I believe its only contraindication is when the case is seen late and is suffering from massive cerebral edema because then it will kill in some instances.

I want to bring up the question of sedation in these cases, as to whether or not morphine should be used. I don't think it should be used, but I do know that there are instances where it has to be used.

Chairman Highsmith: Thank you, Dr. Battle.

Gentlemen, following the next paper, I would like to have the report of the Nominating Committee.

The next paper will be by Dr. W. M. Coppridge on "The Treatment of Urinary Infections." I have a telegram here from Dr. Squires, who was to open the discussion on Dr. Coppridge's paper, who says that it is impossible for him to be here, and that the discussion will be opened by Dr. Raymond Thompson.

We will now hear from Dr. Coppridge. (Applause)

. . . Dr. Coppridge then presented his prepared paper. . . (Applause)

URINARY INFECTION

By Wm. M. Coppridge, M.D., Durham, N. C.

Little has been added to our knowledge of the pathology and diagnosis of urinary infections in the last ten years. While it can undoubtedly be said that there has been considerable progress in the treatment of these infections, yet our understanding of the factors contributing to bacterial invasion of the kidney have remained the same. We recognize the paths of invasion as hematogenous, lymphogenous, and urogenous. Stasis is of primary importance in predisposing the kidney to infection. As is true in all bacterial diseases, we must recognize the importance of the resistance of the organ and the virulence of the organism as determining the severity and course of the disease.

In a series of 749 consecutive patients on whom a complete urological examination was done and bilateral cultures made, 468 showed positive cultural findings. These patients were representative cases in routine practice presenting the various symptoms and signs that require urological study. These infected cases comprised 63% of the total number studied and this, I think, may be accepted as an average percentage of urological cases showing infection.

That bacteria pass through the normal kidney has been a much debated question. Rosenau, Bumpus, and Helmholtz have demonstrated that certain strains of colon bacillus and streptococcus exhibit selective localiza-

tion in the production of pyelonephritis. Predisposing obstructive lesions are present in the majority of cases and may be intrinsic or extrinsic in nature—the intrinsic causes are stones, tumor growths, strictures, prostatic enlargement, congenital valves, diverticulum, and neurogenic disturbances, while the chief extrinsic causes are ureteral kinks due to movable kidney, aberrant vessels, congenital or acquired bands, pressure of tumors, cysts, gravid uterus, and double ureters. Many analyses show the colon bacillus with its seventy-two different strains is the most frequently found organism. Sixty-four per cent of our infected cases showed this organism. Next in order of frequency are the staphylococcus, aureus and albus—34% of our cases. In adults, Caulk's series showed women predominated two to one and in children, girls three to one. Birdsall has given a short, rational discussion of the pathology. In accordance with its location, clinical course, and pathology, renal infection is classified as pyelitis, pyelonephritis, acute hematogenous suppurative nephritis, carbuncle of the kidney, infected hydronephrosis, and pyonephrosis. There has been much controversy over the nomenclature pertaining to the two terms, pyelitis and pyelonephritis. Most pathologists claim that a true pyelitis very seldom occurs and that the term pyelonephritis should be used more generally because the kidney substance is involved to some extent in practically all cases where there is infection in the pelvis. We have usually reserved the term pyelonephritis for the more acute, severe infections and recognize that it may be ascending or descending in form. Acute hematogenous suppurative nephritis or acute pyemic kidney and carbuncle of the kidney are always descending infections, reaching the kidney by the blood stream and running an acute and dangerous course. The organism is usually the staphylococcus of a high degree of virulence. In ordinary pyelonephritis and most ascending infections of the kidney, the straight tubules are dilated, distorted, and filled with epithelial debris, pus cells, urinary salts, and invading bacteria. The veins are also congested and distended with coagulated blood and pus cells. This is in marked contrast with the picture of hematogenous suppurative nephritis in which the blood clot formation takes place in the arteries for the reason that they are terminal. In both cases, the organ may be converted into a mass of small abscesses. It is not necessary here to go into diagnosis of kidney infections except to say that all of these cases should be thoroughly studied. The value of upright pyelography should be stressed since this procedure will often reveal an obstructive lesion unsuspected before. Every effort should be made to determine the types of organisms present. We find that routine smears from urinary sediment are valuable in addition to cultural studies because there is often a mixed infection—the colon bacillius with staphylococcus or streptococcus. In cultures the colon bacillus often overgrows the cocci to such an extent that they cannot be found. The direct smears will usually show the cocci as well as the bacilli. The occurrence of these two organisms in the same case often explains the poor results obtained when the patient is treated by the ketogenic diet or with mandelic acid.

All of us no doubt have wondered why such a large number of patients present themselves every year with badly damaged or dead kidneys—the result of infection—without any suggestion having been made to them that they need a urological study. After all, the presence of pus in the urine must be regarded as only a symptom, we might say, of urinary pathology. In most instances it calls for investigation of the underlying cause. It has been most aptly stated that pyonephrosis means medical procrastination and neglect.

TREATMENT

The treatment of renal infection constitutes a most comprehensive study of elimination, eradication, and corrective measures. The principal features in the treatment of all renal infections are:

1. Regulation of mode of living and the diet.
2. Promotion of diuresis.
3. Correction of constipation.
4. Administration of urinary antiseptics and the transforming of the chemistry of urine.
5. Eradication of focal infections.
6. The establishment of adequate drainage.
7. Correction of urinary obstructive interference.

In all acute renal infections the treatment may be outlined as follows:

1. Patient should be at rest preferably in bed.
2. Correction of constipation—changing of intestinal flora.
3. Administration of diuretics.
4. Administration of urinary antiseptics with alkalinization or acidification.
5. Removal of all foci of infection.
6. Drainage of renal pelvis, ureter, bladder, and instillation or lavage with antiseptic preparation.
7. Surgical procedures.

Mathe and Campbell have presented a comprehensive outline for the treatment of chronic renal infection.

1. Correction of chronic constipation.
2. Clearing up foci of infection.
   A. Furuncles and carbuncles—incision and drainage.
   B. Infected tonsils—tonsillectomy.
   C. Infection of sinuses, mastoids—open, drainage.
   D. Abscessed and pulpless teeth—extraction.
   E. Osteomyelitis—surgical treatment.
   F. Respiratory tract infection—medical treatment.
   G. Prostatitis and seminal vesiculitis—massage, surgical drainage.
   H. Infected genital organs in women—removal of infected tubes, and cauterization of cervical glands.
3. Correction of urinary stasis and obstruction.
   A. Upper urinary tract.
      1. Ureteral stone—intra ureteral manipulation, ureterolithotomy.
      2. Ureteral stricture—progressive dilation.
      3. Increased mobility with kinking of ureter—support with belt, binder or corset, nephropexy or ureteroplasty.
      4. Ureteral anomalies—ureteroplasty, heminephrectomy, ureteropyeloneostomy.
      5. Extra ureteral pressure:

(a) Aberrant renal vessel—surgical resection.
(b) Abdominal and pelvic tumors—adequate treatment.
(c) Gravid uterus—pelvic lavage at intervals, continuous ureteral drainage.

6. Stones, tumors and abscessed in kidney itself—nephrolithotomy, nephrotomy, decapsulation, nephrectomy.

B. Lower urinary tract.
1. Congenital valves of posterior urethra—surgical removal, electrocoagulation.
2. Urethral stricture—dilation, urethrotomy.
3. Median bar vesical neck—punch operation; contracted vesical outlet—transurethral prostatic resection—open operation.
4. Hypertrophied prostate—prostatectomy.
5. Bladder stone—litholapaxy, cystolithotomy.
6. Bladder diverticulum—diverticulectomy.
7. Acute gonorrhea—adequate treatment including the complications.

C. Neuromuscular disease—antiluetic therapy when due to syphilis, establishment of free drainage—cystotomy.

4. Drainage.
A. Diuresis.
B. Renal drainage and lavage per catheter.

Silver nitrate solution	0.5 to 4 per cent.
Mercurochrome	1 to 2 per cent.
Metaphen	1:500 to 1:1000.
Neo Silvol	10 to 20 per cent.
Argyrol	10 to 25 per cent.

1. Renal lavage at intervals
2. Continuous drainage with retention catheter.

C. Daily irrigation of bladder to minimize re-infection of the kidneys.

5. Medication.
A. Internal
Salol
Alkalinizing and acidifying urine
Methenamine
Methylene blue
Neutral acriflavine
Hexylresorcinol
Pyridium
Serenium

B. Intravenous
Methenamine
Mercurochrome with or without glucose
Neosalvarsan
Pregl's iodine

6. Vaccine therapy.
7. Surgical treatment.
A. Surgical drainage and lavage through tube in most dependent portion of pelvis.
B. Decapsulation for perinephritis, pyelonephritis, and concurrent abscess formation.
C. Nephrectomy.
1. In cases with concurrent abscess of kidney.
2. Hemorrhagic type of pyelonephritis.

D. Nephrectomy for:
1. Diffuse pyelonephritis with destruction of kidney.
2. Unilateral advanced stricture (ureteritis obliterans)
3. Persistent uncontrollable hematuria.
4. Where pyelonephritis has terminated in pyonephrosis.
5. Calculus pyonephrosis.

The surgical treatment of kidney infections is beyond the scope of this discussion. The medical handling of the very acute cases has been well standardized and calls for no discussion here. In considering the medical treatment of the chronic infections it is well to divide them into two groups, first, coccal, and second, bacillary.

Treatment of the coccus infection presents a difficult problem. Staphylococcus often occurs along with the colon bacillus and sometimes is difficult to find. Last year Briggs[1] called attention to what he termed, "sterile pyuria." The causative organism in his cases was a gram positive coccus, found in smears but could not be cultured. He found neoarsphenamine intravenously cleared up the infection very quickly. I recall one case of ours, with whom we worked a number of years with no results from usual methods of treatment, but who was finally greatly benefited from neoarsphenamine. This drug has seemed to be of considerable value to us in treating ordinary staphylococcus infections and we employ it now almost routinely in the very chronic cases. This is done in addition to the oral administration of serenium or pyridium, pelvic lavage, search for foci, and sometimes vaccine therapy. Gentian violet intravenously has been used by some with a degree of success.

The treatment of the acute pyemic kidney and renal carbuncle is of course surgical. The former is so often bilateral and part of a blood stream infection that surgery is seldom indicated. The latter should be operated on as soon as the diagnosis is made. Medical treatment is of no avail. Cabot in the *British Medical Journal* of September 1936 gives a very valuable contribution to blood borne coccus kidney infections. He thinks they are much more common than generally supposed. He recognizes various degrees, from indiscernible cortical lesions to the more advanced cases of pyemic kidney. In his opinion bacteria do not pass through the normal kidney. He had no suggestion for medical treatment but simply recommended surgery in the more severe cases.

Clark[2] and Helmholtz[3] in 1931 introduced the ketogenic diet for the treatment of colon bacillus infections. This work marked the beginning of a new era in the treatment of chronic urinary infection. Their work has been confirmed and elaborated upon by Fuller,[4] Wells,[5] Crance,[7] and Maloney,[7] and Rosenheim,[8] and others. The work is well known and their results indisputable. Helmholtz believes that the active bactericidal or bacteriostatic agent is beta oxybutyric acid acting in an acid medium of hydrogen ion concentration, about 5 to 5.2. Crance and Maloney question this and claim that the pH or around 5 alone determined the antiseptic value of the treatment. They report good results with the administration

of nitrohydrochloric acid. Fuller[6] and Colebrook[6] administered beta oxybutyric acid by mouth to reinforce the dietary ketosis. Their results were not promising because the drug apparently is almost completely oxidized before elimination.

We have used the ketogenic diet with very pleasing results in 110 patients. Possibly half of them have been started on the diet while in the hospital; the remainder were simply instructed and furnished a diet list in the office. The common objections to the method are, (1) it cannot be carried on at home, (2) the patients will not cooperate, (3) it is too expensive, (4) proper check-up cannot be given. We have found none of these objections valid. In almost every instance the patient has followed our instructions—they are typewritten and simple to follow—have returned once or twice weekly for pH determination, and have almost always been interested in the procedure. In the 110 cases, with few exceptions, the results have been good, even in some cases of marked urinary retention. If properly carried out, with full cooperation of the patient, together with urotropin therapy or mandelic acid, this method of treatment will certainly give results in a large proportion of cases. In support of Helmholtz's work it has been our experience that best results are obtained when ketone bodies are found in the urine, notably acetone and diacetic acid.

Rosenheim, following up the work of Fuller, Colebrook and others, investigated several ketone acids in search of one that could be administered by mouth and appear in the urine unchanged and there exert the bacterio-static action of beta oxybutyric acid. He found mandelic acid possessed such characteristics. It is now generally used instead of the ketogenic diet. However, it is well to keep in mind that the diet is often a valuable adjunct to mandelic acid therapy. In cases in which it is difficult to secure the proper degree of urinary acidity a strict or modified diet will often produce successful results.

We have used mandelic acid therapy in approximately 100 patients and feel that it is a most valuable drug. Of the several preparations on the market we have employed three and find little difference in their actions. There has been some nausea and loss of appetite in a considerable number of the patients when the drug is first begun but tolerance to it is soon developed.

So much has been written on this subject in the last six months that it seems needless to attempt repetition of it here. Helmholtz and Osterberg, Grayson Carroll and Bransford Lewis, Cook and Buchtel and also Dolan all, the Journal of the American Medical Association for November 28, 1936, give exhaustive reports of their experience. Braasch in the same journal of March 27, 1937, discusses the drug in detail. From our experience together with what we can learn from others it would seem that the following points are important.

1. The acidity of the urine must be maintained at a pH of from 4.8 to 5.5.

2. Some gram negative bacilli are very resistant or immune to its action—notably Aerbactor aerogenes and Pseudomonas.

3. Coccus infections are variously affected but usually not nearly so satisfactorily as the bacillary types.

4. The drug should be given carefully in cases of marked kidney damage.

5. The patient should be seen at frequent intervals at least twice weekly and the urine carefully checked.

6. Two to three weeks seems to be the maximum period for continuous treatment.

7. In resistant or recurrent infections complete urological examination should be carried out.

8. The drug is of great value in preparing infected cases for operation.

9. We have used it with pleasing results, postoperatively in kidney, bladder and prostate cases.

10. The drug should be regarded as a valuable adjunct in the handling of urinary infection but not as a panacea to be relied upon to cure every patient who shows pus cells in his urine.

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Chairman Highsmith: Dr. Thompson, will you open the discussion? Is Dr. Raymond Thompson here? It appears that he is not here. Dr. Coppridge's paper is open for general discussion. Is there any discussion on Dr. Coppridge's paper?

Have you anything further to say, Dr. Coppridge?

Dr. Coppridge: No, thank you.

Chairman Highsmith: I would like to hear from the Nominating Committee now.

Dr. Thos. DeL. Sparrow (Charlotte): Mr. Chairman, Dr. R. L. Gibbon, who was Chairman of this Committee, had to leave and asked me to make this report: The Nominating Committee recommends Dr. Julian Moore of Asheville for Chairman of the Surgical Section.

Chairman Highsmith: Gentlemen, you heard this report by the Nominating Committee. The Nominating Committee suggests Dr. Julian Moore of Asheville as Chairman of this Section, and moves that the nomination be accepted.

. . . The motion was duly seconded by Dr. R. B. Davis of Greensboro. . .

CHAIRMAN HIGHSMITH: Are there any further nominations?

DR. ADDISON G. BRENIZER (Charlotte): I move Dr. Moore by elected by acclamation.

. . . The motion was duly seconded. . .

CHAIRMAN HIGHSMITH: It is moved that Dr. Moore be elected by acclamation.

. . . The motion was put to a vote and carried. . .

CHAIRMAN HIGHSMITH: Dr. Julian Moore is unanimously elected Chairman of the Surgical Section for the ensuing year.

The last paper on our program is by Dr. Graham Ramsey of Washington—it is not the last because the last paper was read before the General Session—on "Chronic Duodenal Obstruction." The discussion will be opened by Dr. Robert Hackler of Washington.

. . . Dr. Ramsey then read his prepared paper. . . (Applause)

CHRONIC DUODENAL OBSTRUCTION

By GRAHAM RAMSEY, M.D., Washington

Chronic duodenal obstruction may be divided into two main groups, (1) Congenital, (2) Acquired, though as to the etiology of certain types opinion is quite at variance.

Under the congenital group we find marked dilatations such as occur in megaduodenum, which is thought to be due to a form of neuromuscular disfunction such as underlies (Hirschsprung's) disease. This condition is often discovered in early life, and several cases have been reported in recent years by Dubose,[1] Downes,[2] and others. Frequently when there is no real obstruction accompanying the condition the individual will reach adult life without the real nature of the disease being discovered. The symptomatology is often extremely vague, the patient complaining only of a sense of fullness in the epigastrium after eating with periodic emesis generally attributed to biliousness.

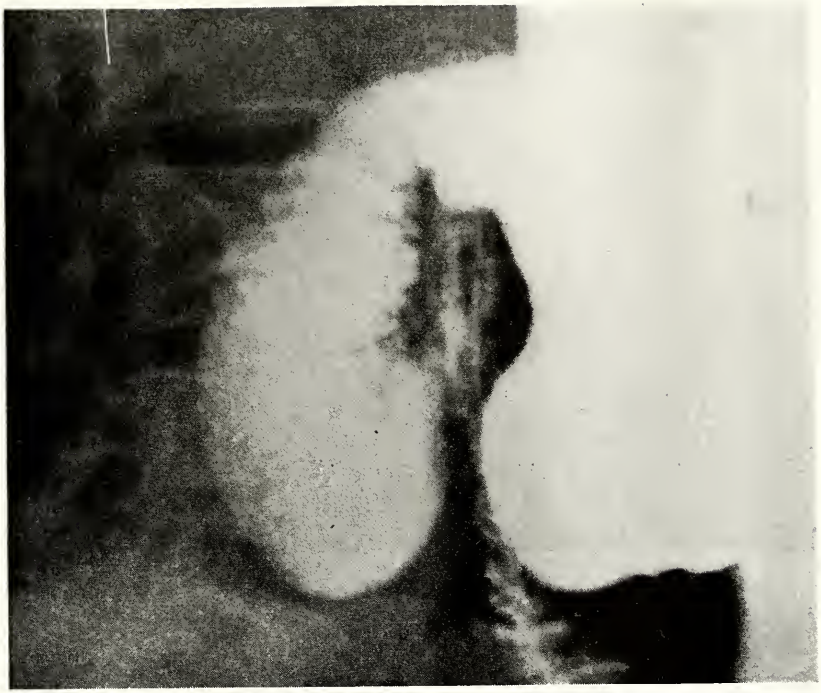
Other congenital etiological factors causing chronic duodenal stasis and obstruction are intrinsic defects such as a septum with only a small perforation in it—such a case being reported by Ladd[3], and stenosis of varying degree, among the extrinsic causes may be listed abnormalities in the peritoneum causing aberrant bands or attachments, diverticuli, abnormalities in the position, length and size of the duodenum, and faulty rotation of the intestine in embryonic life.

Etiological factors in the acquired forms of chronic duodenal obstruction are quite varied and among them may be mentioned carcinoma of the pancreas, primary carcinoma of the duodenum, carcinoma of the gall bladder, inflammatory glands, tuberculosis, foreign bodies such as gall

Anteroposterior view showing statis in duodenum with dilitation.

stones and hair balls, benign tumors, syphilis, ulcers, twists of the mesentery, adhesions, and pressure from pull of the transverse mesocolon causing the superior mesenteric vessels to exert pressure obstruction, Dr. A. G. Brenizer[13] having reported several cases of this type at the 1931 meeting of the State Society. Many interesting cases are found in the literature illustrative of all of the above as causal factors.

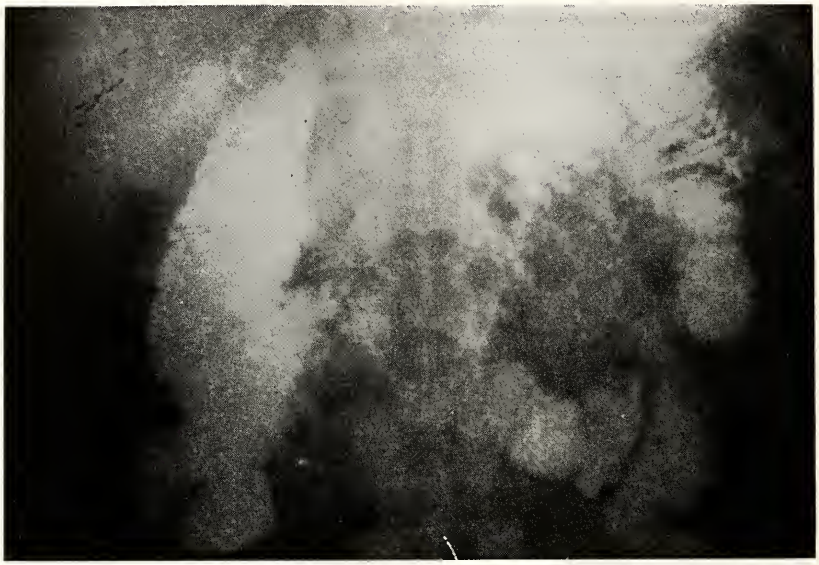
Perhaps the most interesting form of chronic duodenal obstruction, however, is the chronic idiopathic dilatation of the duodenum or chronic duodenal ilius as it is also called, and it is to a discussion of this type that this paper is to be chiefly devoted. Much has been written in an effort to explain the etiology of this interesting condition, a great many advocating pressure of the superior mesenteric vessels on the third portion of the duodenum due to the pull of the mesentery in visceroptosis. The strength of this claim lies in the anatomic relationship of the root of the mesentery to the third portion of the duodenum and the fact that the condition occurs chiefly in asthenic individuals. It is also a fact, however, that most people with visceroptosis do not have duodenal stasis, and also, that the condition occurs in many who have no visceroptosis. Moreover a marked pressure must be exerted to stop the progress of the fluid content of the small intestine. Devine[4] believes that the condition is due to a disturbed inervation, and is similar to the condition which at times involves the lower



Lateral view showing the duodenum filled and dilated with the barium as far as the middle of the 3rd portion.

intestines, there being an abnormal action of the sympathetic nerves, due to improper balance between the nerve supply of the sphincter muscle and the motor supply of the muscles above the sphincter, both he and Robertson[5], together with many others, doubting the pressure theory. The work of Hunter[6] and Royle[7] has shown that constant impulses are thrown off by the sympathetics while intermittent impulses are thrown off by the parasympathetics, and that division of the sympathetic chain would relax spasm and allow the intermittent contraction to force the intestinal conents on. This work was done on the lower intestinal tract but they believe that Hirschsprung's disease and cardiospasm are caused through this same type of action. Halpert[8] stated that in the chronic iodiopathic dilatation of the duodenum obstruction was caused by a fold of the mesentery belonging to the part of the small intestine which is displaced into the pelvis monor. With so many opposed opinions as to causation the term idiopathic dilatation and obstruction is very appropriate.

The symptomatology is almost as variable as the etiology in some cases where there is dilatation present but no real stasis, so the symptoms will depend largely on the amount of stasis present.

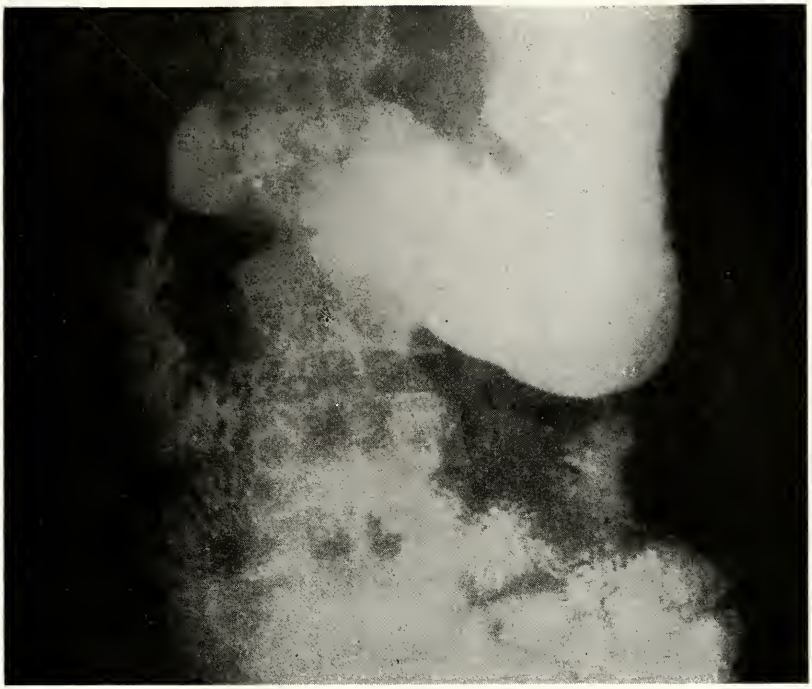


A 5 hr. picture showing a small retention in the stomach with a large retention in duodenum.

In a mild case the only thing noted may be headache with an occasional spell of weakness and slight nausea. Under the stress of illness or some emotional strain or if there be any mechanical factor of any degree that develops, more or less characteristic symptoms are shown, such as epigastric fullness and flatulence just after meals, together with pain in the epigastrium which at times resembles the pain of gall bladder disease. If the stasis is marked there is not only nausea but vomiting present, which usually comes on soon after meals and is of a persistent character. Most of the patients with the condition are of the visceroptotic type and are extremely malnourished if the stasis is of marked degree. With the nervousness that is almost sure to develop with these symptoms these unfortunate people are often classed as neurotics and little attention is paid to them, most of the attacks being called migrain or bilious attacks. Since the acute symptoms are often periodic with the patient gaining in weight and strength between attacks and with but little discoverable during these interims the mistake is often excusable.

Many date their disturbances back to childhood and through the years have become so fearful of the effect of food that they eat little or nothing.

With a suggestive history roentgenological investigation is the most essential procedure, for a definite diagnosis can not be made through any other means excluding exploration. The main diagnosis usually lies between this condition and gall bladder disease. Ulcer must also be ruled out, though ulcer may be simply an accompanying factor in the condition, some



Anteroposterior view after duodenojejunostomy showing the functioning stoma. Compare with figure 1.

(Devine) claiming that in these conditions ulcer is caused by the spasm of the pylorus due to faulty sympathetic nerve action, which spasm prevents the normal regurgitation of a small amount of the duodenal content into the stomach after the passage of the stomach contents.

X-ray is not infallible, however, according to Balfour, and many with chronic duodenal ilius are not of the asthenic type, so negative findings do not invariably rule out the condition, as has been proved by certain patients who were operated on account of their symptoms with negative findings by x-ray and proved to have the condition.

The roentgenological examination in the vast majority of cases gives the first clue to the real diagnosis and dependent on the amount of stasis shown helps direct the treatment.

The treatment of duodenal ilius depends largely on the amount of stasis present. If this is slight and the symptoms not marked medical treatment should be tried before surgery is considered. Medical treatment consists of several weeks' rest in bed with the foot of the bed elevated, a high caloric low residue diet, mild sedatives, and perhaps lavage and duodenal feeding if necessary. After the bed rest the visceroptotic individual is often benefited by an abdominal support.

Lateral view after operation showing the functioning stoma between jejunum and duodenum. Compare with figure 2.

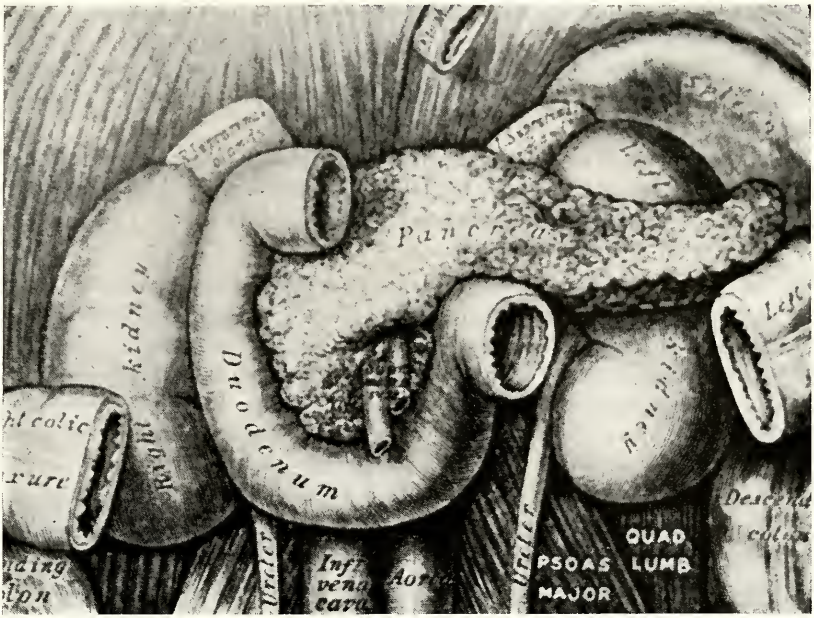
If these measures are unsuccessful or the stasis marked then operation is advisable.

Many operations have been advocated for the relief of chronic duodenal obstruction—Devine acting on the theory that the condition is due to derangement of the gastric sympathetics advised dividing the stomach, bringing the cardiac end of the stomach through an incision in the transverse mesocolon and suturing it end to side to the jejunum, stating that if the condition was due to faulty sympathetic impulses that this would interrupt them, and that duodeno-jejunostomy would not do this, and so would bring no marked benefit.

Gastroenterostomy has been advocated, but as the obstruction remains in the duodenum after this procedure it has proved a failure for mechanical reasons.

On the theory that the action of the sympathetics actions could be lessened by cutting the driving force, adrenolectomy and adrenenal denervation have also been done but with only fair results.

The most logical operation according to most is duodeno-jejunostomy which is advocated by men like Wilkie[9] and the Kelloggs[10] who have had wide experience and report excellent results.



The normal anatomy of the duodenum and it's relation to the superior mesenteric vessels taken from Gray's Anatomy.

Chronic duodenal obstructions from mechanical causes necessarily are individual problems, the treatment being entirely dependent on the findings, and will not be taken up.

The following case report is given as being rather typically illustrative of chronic idiopathic duodenal obstruction.

Miss C. M., age 24, entered the hospital December 14, 1936, with the history that since childhood she had been subject to vomiting spells, and that as she had grown older these attacks had become more frequent. The attacks were accompanied by a sense of epigastric fullness and weight, and often by a migrain type of headache. These attacks would generally last one or two days but between them she always felt uncomfortable after eating. The attacks became more frequent in 1929, averaging about one a month. In 1931, during one, her appendix was removed, and following this the vomiting spells became more frequent and she started losing weight. In 1932 she weighed 131 pounds and now weighs 110 pounds. Lately she has vomited almost constantly, immediately after eating, often without nausea. In 1933 she was x-rayed with negative findings except for a poorly functioning gall bladder. She has had several gall bladder drainages since with only temporary relief. Since the vomiting has become so frequent she has developed tenderness in the epigastrium, and has a cramp-like epigastric pain shortly after meals. She has always been troubled by constipation and gas.

Physical examination was essentially negative, blood pressure being 120/74, height 63 inches, weight 110 pounds. Her development and build were entirely normal and she showed no evidence of visceroptosis, the only positive findings being tenderness in the epigastric region and a three-inch McBurny scar.

Laboratory reports showed normal blood count, negative urine and Wassermann. Gastric analysis, free HCL 63 degrees, total acid 75 degeres.

X-ray examination was as follows:

GI and GB

The esophagus was negative. The stomach was "J" shape, moderate in size and normal in position. Peristalsis was two phase in type and passed without interruption from the cardia to the pylorus. No filling defects were seen in the stomach walls. The duodenal bulb filled easily and appeared entirely normal from all directions. Passage of the barium through the duodenum was obstructed in the third portion, causing a marked delay at this point with a resulting dilatation of the second portion.

At five hours there was a small residue in the stomach, and a residue in and marked dilatation of the second portion of the duodenum with reverse peristalsis, and the head of the meal had reached the ascending colon. At seven hours all of the barium had passed from the stomach and duodenum, and had progressed as far as the hepatic flexure.

At twenty-four hours the barium was scattered from the cecum to the rectum. No areas of point-tenderness were found. Another glass of barium was given by mouth and the same condition was again demonstrated in the duodenum.

Tetraiodophenolphthalein was given orally for the visualization of the gall bladder. At 14 hours no dye could be seen in the gall bladder. At 16 hours there was a faint shadow showing the gall bladder to be rather large and elongated.

CONCLUSION

1. Chronic obstruction in the third portion with dilatation of the second portion of the duodenum.

2. Moderately enlarged and elongated gall bladder showing a subnormal function.

Patient was explored December 19, 1936. No real obstruction could be demonstrated at operation, though there was a band extending from the upper part of the mesentery to the duodeno-jejunal flexure. This was divided and the duodeno-mesocolic fold partially divided, the assumption being that the obstruction was near the flexure and might be caused by these bands. The gall bladder was of good color, soft and compressible but the left border was adherent to the pylorus. This was freed, as were adhesions of the omentum to the old McBurney incision, and the abdomen closed. It was felt that the bands and adhesions were responsible for the condition and that an anastomosis was not justified at this time. For three

weeks after leaving the hospital patient did well, the x-ray examination showing a definite improvement in the passage of the duodenal contents. Then all her symptoms recurred with the same intensity as before and persisted until she was readmitted February 24, 1937, with all findings essentially the same, but with her weight down to 101 pounds and complaining of marked weakness and nervousness. After x-ray check-up with findings similar to those on her first admission a duodeno-jejunostomy was decided on, and this procedure carried out February 27, 1937. Roentgenoscopic examination following operation has revealed a well functioning stoma and a duodenum of normal appearance. Patient has returned to her duties as a trained nurse, has a good appetite, weighs 110 pounds, and is free of symptoms for the first time since she can remember.

Enough time has not elapsed since operation to class this as a definite cure but the results have been very satisfactory so far.

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Chairman Highsmith: Thank you, Dr. Ramsay.

The first discussion on Dr. Ramsay's paper is by Dr. Robert Hackler.

Dr. Robert Hackler: My interest in this subject of chronic duodenal obstruction is primarily from the x-ray standpoint. I think that often the roentgenologist probably gets the first clue in this disease. The symptoms are often confusing, and just from the symptomology or physical examination, the true condition cannot be determined.

I have some pictures here, made on the case presented by Dr. Ramsay, which I will show.

This case was sent to the x-ray room for gall-bladder and gastro-intestinal studies. The gall-bladder showed subnormal function, with no evidence of stones, and we considered that the gall-bladder was not the causative factor.

A barium meal was given, and the stomach and esophagus were found to be negative. The duodenal bulb filled easily and showed no evidence of ulcer or other pathology. The barium flowed into the second portion of the duodenum and progressed to the middle of the third portion where its forward progress was markedly delayed. It did not stop completely but there was a very definite delay at this point, suggesting obstruction.

In this picture, this being the duodenum, the barium is seen filling the second portion and the proximal half of the third portion. You see there is a sharp demarcation in the middle of the third portion. This was constant on all films.

The patient was turned in a lateral position. This is a lateral view of the stomach and duodenum. Here is the stomach and this is the duodenal bulb. You can see where the barium is delayed at this point, causing the dilatation of the proximal half of the third portion and all of the second portion of the duodenum.

The patient was watched at intervals to see how long the barium would remain in the dilated duodenum. We knew there was an obstruction of some kind and wanted to determine the extent of it and, if possible, come to some conclusion as to the causative factor. Of course we thought of duodenal bands, and of pressure by the mesocolon, and the superior mesenteric vessels, etc. If you will notice, this obstruction is in the middle of the third portion of the duodenum and that is directly under the superior mesenteric vessels. In other words, the obstruction is not at the ligament of Trietz, according to these pictures.

At five hours here is a film showing the stomach with a small residue in it and a definite retention in the duodenum, still at the same place.

The patient was operated upon twice as you have already heard. The last operation was a duodeno-jejunostomy. Here are some pictures showing the function after the operation. This is the stomach again and this the duodenal bulb. The barium now flows through the duodenum and passes through the stoma into the jejunum. You see there is no stasis whatever now. There is no dilatation and the duodenum has the feathery appearance that it should have as barium passes through it.

Here is a lateral view showing the obstruction and this a lateral view after operation. This is the bulb, you see the barium passes along the duodenum through the stoma into the jejunum. As Dr. Ramsay told you, the patient has been free of symptoms since the operation.

A number of these cases were reported many years ago by Oschner.

It was his idea that they were due to pressure of the superior mesenteric vessels, and that the pressure was the result of ptosis of the cecum and large bowel pulling on the mesocolon. He resected the right half of the colon on six or eight cases and reported that it relieved the patients of the symptoms and that they were well from then on.

Many cases similar to this have been reported since. They are reported every little while, and the idea as to the causative factor has varied from time to time. Vanderhoof reported six or eight cases in 1917, all diagnosed as chronic duodenal obstruction, the result of pressure of the superior mesenteric vessels and gave the x-ray findings, which did not include any reported cases of duodenal stasis. The main thing common to practically all of his cases was the ptosis of the stomach and bowel. He also reported that all these cases were relieved by medical treatment.

The case just reported was not improved by any posture tried in endeavoring to relieve pressure by the root of the mesentery and the superior mesenteric vessels, if such should happen to be the cause of the obstruction, and we believe the etiological factor to be a disturbed innervation of the duodenum.

Chairman Highsmith: You have all heard Dr. Ramsey's paper. It is now open for general discussion.

Dr. Addison G. Brenizer (Charlotte): Mr. Chairman, may I just say this, since Dr. Ramsey quoted me?

I don't know whether it was called to your attention or not, but several years ago there were a series of articles by me in *The Annals of Surgery,* that had to do with obstructions of the duodenum from diverticula, one with syphilis, another with an adherent gall-bladder. They included the subject of chronic duodenal obstruction, due not merely to a prolapse of the cecum, and a rotation of the right colic artery over the duodeno-jejunal function, but the pressure and pull-down of the superior mesentery.

That, at many times, is gripped down on the duodenum almost like a band. The reason that it doesn't clear up by getting on all fours is because that grind has taken place. It has pressed and pulled on the duodenum until there has been quite an inflammatory reaction there, and some adhesive bands.

In this case of Dr. Ramsey, he first liberated the adhesions and then went back and did a duodeno-jejunostomy, as he has found out now, and says the duodeno-jejunostomy is the operation to be done.

In another paper the plea was this: Be sure of the patency of the duodenum in all operations on the stomach. There are two cases of my own, and another in another hospital which are reported, where gastro-enterostomies were done, and vomiting continued. Then with x-ray pictures, the obstructed duodenum was shown, and a duodeno-jejunostomy was done, with relief of the patient. One was confused on account of a pyloric obstruction combined with a duodenal obstruction.

So I think these people should be examined standing up, when the x-ray pictures are done, and then again on their backs as well as on their bellies.

In this article on duodenal obstruction in *The Annals of Surgery* is pictured a man with his duodenum obstructed, and peristalsis reversed, in the act of ..... on his back. When turned over on his abdomen he would get temporary relief and his duodenum would empty.

I am persuaded that duodenal obstruction and in the beginning acute dilatation of the stomach, extending from the duodenum up on into the stomach, and the so-called vicious circle, are all one and the same thing. They ought to be relieved finally by a duodeno-jejunostomy. (Applause)

CHAIRMAN HIGHSMITH: Is there any further discussion? Dr. Ramsey?

DR. RAMSEY: Mr. Chairman, I want to thank Dr. Hackler for presenting the x-ray part of this case. I also want to thank Dr. Brenizer for his remarks.

Dr. Brenizer stressed one point in his case. He demonstrated at the operation that these vessels were obstructed. In this particular case that I reported today, we could not demonstrate that, although we looked for it at that particular point. There was no real obstruction that could be demonstrated by any extrinsic lesion whatever, although I thought and hoped that it would clear the patient up, and was encouraged by her first progress.

CHAIRMAN HIGHSMITH: Gentlemen, Dr. Roberson's paper was presented before the First General Session, and is read here by title only.

This terminates our program. I wish to thank you all for your cooperation and help in making this what I hope was a successful meeting.

We stand adjourned. (Applause)

. . . Whereupon the meeting adjourned at five-thirty o'clock p.m. . .

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY AFTERNOON, MAY 5, 1937

The Section on Practice of Medicine of the Medical Society of the State of North Carolina, convened at two-forty in the Club Room, Robert E. Lee Hotel, Winston-Salem, Dr. George Mitchell presiding.

CHAIRMAN MITCHELL: The meeting will come to order.

In the first place, I want to take this time to thank the doctors who have been so good as to prepare papers for this Section. I want to say that the response to my invitation has been splendid, and I want to thank each and every one of you for your cooperation in helping to get the program up.

The first paper that we are going to have is by Dr. MacMillan. The title of his paper will not be as you have it here on your program, but will be "Convulsive Disorders of Hysterical Origin." I will ask Dr. MacMillan to read his paper.

DR. ELBERT A. MACMILLAN (Winston-Salem): Mr. Chairman, Ladies and Gentlemen: I am taking a tip from our friends in the ministerial profession today in selecting a text for my paper from the Bible. I think it is appropriate.

. . . Dr. MacMillan continued with the presentation of his prepared paper. . . (Applause)

CONVULSIVE DISORDERS OF HYSTERICAL ORIGIN

By ELBERT A. MACMILLAN, M.D., Winston-Salem

"A double mind in man is unstable in all his ways."
—The Book of James.

Of all the protean manifestations of hysteria perhaps the most dramatic are found in the group of hysterical convulsive disorders. It is a matter of common observation that the various anesthesias and bizarre paralyses that were so commonly exhibited by hysterical patients in the last generation, and especially in the war-neuroses, are now much less frequently seen; but there seems to be no decrease and rather an increase in the incidence of what has been called hystero-epilepsy.

I have recently had the opportunity of observing a number of patients who were suffering from convulsions, and who apparently fit into this group. It is the purpose of this presentation to discuss this problem and to offer analyses of some cases which illustrate different phases of the problem.

There are certain marked differences between an attack of true epilepsy and an hysterical convulsion. Although these differences are well recognized by most medical men, the fact that three of the last four cases of hysterical epilepsy which have come under my observation have been previously diagnosed as true epilepsy induces me to believe that a brief resume of the distinctions will not be out of order.

In a very sane discussion of this condition Purves-Stewart[1] has the following to say: "One variety of hysterical fit is sometimes mistaken for epilepsy. There is all the greater liability to make this mistake, since the fit is generally over before we reach the patient, who is usually a woman, and we are dependent for our information upon the accounts, more or less accurate, of unskilled witnesses. But if the physician is lucky enough to be present during a fit, there is seldom any difficulty in diagnosis." And so we will enumerate a few points that are of greatest benefit in making this differential diagnosis.

(1) The patient never hurts herself in falling. The violent muscular movements that accompany the convulsion are of the purposeful sort.

(2) There is no stertorous breathing. There may be shallow, uneven respirations, and occasionally breath-holding.

(3) The face does not become livid, and very infrequently is there increased salivation.

(4) The patient does not bite the tongue.

(5) There is no incontinence of urine and feces.

(6) The eyes are usually tightly closed, and the patient resists the efforts of a physician to open them.

(7) The hysterical fit is not followed by a coma.

(8) The patient is not really unconscious during an attack, and pressure on the supraorbital nerve will bring a response, while similar pressure in a true case of epilepsy will have no effect.

(9) The hysterical convulsion can be reinduced by suggestion.

The distinction is not always so easy to make as may be indicated by the differential table just given. The difficulty may be made greater in certain cases of true epilepsy which are colored by a strong hysterical overlay. On the other hand, in certain cases of hysterical epilepsy in which the patient has had occasion to observe true epileptic seizures, there may be a surprising number of manifestations of real epilepsy. In the majority of cases, however, a competent medical observer can very easily make the proper diagnosis, especially if he is able to witness an attack. The compliance of the hysterical patient usually makes this possible. It was Charcot who first well understood the psychology of hysteria and who first offered a comprehensive definition of the condition. His dictum that hysteria is a condition manifesting itself chiefly by clinical symptoms which can be reproduced by suggestion, and which can be made to disappear again by persuasion and suggestion. It was Charcot likewise who first learned the

trick of inducing by suggestion attacks of hysterical epilepsy before his classes.

The scope of this paper is scarcely that to allow a complete discussion of the psychological mechanism responsible for setting off the hysterical explosion. The simple premise laid down by Strecker and Ebaugh[2] explains this mechanism as clearly as possible. To quote: "It is to the effect that a psychological situation which is unresolved becomes converted into certain phenomena which may be discovered objectively and which constitute the hysteria syndrome."

In practically every case of hystero-epilepsy we are able to discover such an unresolved psychological situation, or conflict. Let it be said emphatically that these conflicts are not peculiar to the hysterical patient. As Adler[3] puts it: "Everyone experiences his conflicts, the neurotic as well as other people. However, it is the way in which the neurotic attempts to solve them that differentiates him from the others."

The three cases which follow illustrate each in a special way the mechanism of production of the hysterical convulsion and each presents a different problem in management.

Case No. 1: E. Z. Age 25. Female. Married.

Came to the out-patient neuro-psychiatric clinic of the Philadelphia General Hospital in December, 1935, stating that she had recently become subject to convulsions which were generalized in type and had become increasingly frequent. She was a well developed young woman, apparently in perfect physical health but noticeably nervous. She first told the story that she had suffered convulsive seizures at all hours of the day, and that occasionally she had them at night while asleep. In the beginning she was reticent in giving details of her family life, but these soon came out.

She had been married for about a year to a young man of about her age. Two of her younger sisters made their home with her and were dependent upon her husband for their support. In the early days of their married life there was harmony, but in recent months the husband had begun to drink rather heavily, and to remain away from home until late at night. Immediately prior to the onset of convulsive seizures in the patient, the husband had begun to come home drunk every night and to go to bed immediately upon arriving at home. He was not cruel to his wife in a physical sense, but simply ignored her. One night as he was walking in the front door in his usual state, the patient felt a peculiar feeling in her head and began to "shake all over." She fell to the floor and became unconscious. She was not injured by the fall, did not bite her tongue, was not incontinent and was not drowsy afterwards. She was conscious in a vague way of what was happening about her. She began to have convulsions regularly after this and each of them was either associated with the arrival of her husband or came at a time when his arrival was shortly expected.

The patient had been treated on the outside by a physician who had

told her that she had epilepsy and would probably continue to have attacks.

In our clinic it was felt that almost without doubt, the whole illness was functional. The conflict was especially difficult in this case in that the welfare of her two sisters had to be considered in any such move as leaving her husband. The background of her illness was explained to the patient, and an attempt was made to make her realize that she must either face the difficult home situation and make the best of it, or else she must leave her husband and make a new start. She waited three weeks before deciding definitely what she was going to do, all the while continuing to have convulsions. Eventually she decided to leave her husband, and go on relief with her sisters, pending a court order for separate maintenance. She was observed at intervals over a period of several months after this, and she never had another convulsive seizure.

Case No. 2: L. K. Age 22. Male. Separated.

The patient was admitted to the North Carolina Baptist Hospital on January 5, 1937, with a complaint of convulsive seizures, accompanied by a state of unconsciousness. The first of these attacks had occurred on July 12, 1936, and followed rather strenuous physical exertion. The period of unconsciousness lasted about two minutes, according to observers. Incontinence of urine and feces were not noted. He did not bite his tongue. He went to bed after this attack and was all right until the following night when he had two more similar attacks.

He was treated in a hospital for a few days shortly after the onset of his attacks. With little improvement he was discharged after a stay of several weeks. No diagnosis was given. Shortly after this he was put under the care of an osteopath, whose manipulations failed to relieve the condition.

The family history was free of feeble-mindedness, insanity or epilepsy. The past medical history was essentially negative.

Physical examination revealed negative findings with the exception of pin-point pupils, which proved to be due to previously administered hypodermics of morphine. Eyegrounds were negative, and there were no positive neurological findings. Blood count and urine analysis were normal; the blood Wassermann was negative.

The patient was a very disturbing factor on the ward. His attacks were not long in coming and they were characterized by a great deal of physical activity and loud yelling. Sedatives were required for two days to keep peace in the ward. It was observed by other patients that while in the attacks the patient's attention could always be obtained by calling his name. There was no incontinence, no tongue biting, no post-convulsive stupor.

It was learned from the family and confirmed by the patient that he had been a good bit worried by his separation from his wife some months before the onset of convulsions. The reason for the separation had been

incompatibility and the patient's father had contributed to the support of the wife after the separation. At the time of his admission to the hospital the patient seemed little concerned by this matter.

Having satisfied ourselves that the convulsions were purely functional in nature, we decided upon a means of treatment based entirely upon suggestion. For three days we prepared him for the treatment by recommending it very highly and by leaving little doubt in the mind of the patient that he was going to be cured by it. The treatment itself consisted of three daily intradermal injections of Antuitrin-S into widely separated parts of the body. The patient became very much interested in the treatment, especially in the area of erythema around the site of injection. This, we told him, was conclusive proof that the treatment would cure his condition.

The patient remained in the hospital several days after the beginning of his treatment and had no further seizures. He stated that he felt better than he had for several months and wanted to go back to work. Two months later we heard that he had gone back to work, had had no further attacks and seemed entirely himself again.

Case. No. 3: J. L. C. Age 17. Female. Single.

Admitted to the North Carolina Baptist Hospital on February 27, 1937, in a seeming state of unconsciousness. The history was that she had suddenly developed this condition while at work as a maid in the home of a farmer. She was described as having had numerous convulsions and was seen by a physician who told the family that she had epilepsy. Examination was entirely negative. Skull x-ray showed no abnormalities. Urine examinations and blood counts were negative. Spinal fluid examination revealed no cells, negative globulin.

The patient remained in a semi-stuporous state for three days after admission to the hospital, occasionally throwing herself from one side of the bed to the other. On the day before she began to return to a normal state of behavior, a spinal tap was done, without anesthesia, the procedure having been discussed at length in the presence of the patient before it was done. A second tap was done on the fourth day after admission. Following this tap, recovery was prompt and complete. It was learned from a conversation with the patient at this stage that her attacks had begun a few hours after she had been abused physically (she did not admit sexual relations) by a young man who lived at the home in which she worked. The situation which had led to the development of her symptoms was discussed frankly with her. She went home on her seventh hospital day and at last reports has suffered no subsequent attacks.

Case No. 1 presents a problem that was happily solved by an adjustment in a very definitely intolerable situation. The patient's convulsions in this case represented an easily understood conversion of an unresolved psychological situation into gross convulsions. Those in medical authority in the case never witnessed a convulsion. The patient was always calm

when she came to the clinic and somewhat above the average intelligence. Hence, at last, it was possible to convince her that her convulsions were psychic in origin and that facing the situation squarely, was what was necessary to produce a cure.

In the case of the young man who had been incapacitated by similar attacks the conflict which probably was responsible for the beginning of the attacks had been resolved. The attacks remained as a residuum. His level of intelligence was low and it was felt that treatment based on suggestion was indicated. He was treated with intradermal injections of Antuitrin-S, the injections being built up in the patient's mind as a curative for his condition. To treat a case with this type of therapy and then to send the patient back to the same conflict that precipitated the trouble would be folly.

In the third case there was a combination of the approaches used in the first two cases. In the early stages of my contact with this case, the patient was wholly irrational and incapable of cooperating in any psychotherapeutic approach. Hence, spinal punctures were useful in restoring the patient to a state of reasonableness at which point it became possible to explain to her the nature of her trouble and to buffer her against the development of subsequent hysterical manifestations.

So we see that the treatment of cases of hysterical epilepsy must be highly individualized. The escape mechanism is present in all cases, in one form or another, but its correction must be based on an understanding of the individual problem. I believe that some form of treatment with a strong power of suggestion is indispensable in certain cases; but its indiscriminate use will lead to disappointment and failure.

REFERENCES

1. Purves-Stewart, Sir James. "The Diagnosis of Nervous Diseases." The C. V. Mosby Company, St. Louis, 1931.

2. Stecker, E. A., and Ebaugh, F. G. "Practical Clinical Psychiatry for Students and Practitioners." P. Blakiston's Son and Co., Philadelphia, 1927.

3. Adler, Alfred. "International Journal of Individual Psychology." First Quarter, 1935.

Chairman Mitchell: Right at this time, before we start on the discussion, I am going to ask Dr. Ringer, Dr. Manning, and Dr. Johnson to pick out the best paper in this Section today.

I am also going to ask Dr. Vernon and Dr. ..... and Dr. Keiger to act as a nominating committee to pick out a Chairman for this Section for next year. During the meeting here they will return and present some name or names to be voted on for your Chairman of the next Section.

Dr. Vernon will open the discussion on Dr. MacMillan's paper.

Dr. James W. Vernon (Morganton): When I was asked to open this discussion, I accepted the opportunity with great reluctance, and yet I did it out of my interest in the subject and in the essayist, and in the hope

that I would apply myself a little more to this puzzling problem and acquire additional information myself.

The paper deserves a great deal of commendation. It has offered a practical solution in therapy of a condition that gives a general practitioner probably more difficulty than anything else. I believe some medical teachers are acknowledging that perhaps a majority of the patients treated by the medical profession are of mental or psychoneurotic origin.

The thought I wish to point out particularly is the great value of understanding in the treatment of these conditions. The psychotherapy of understanding thyself is the keynote of the successful treatment of the psychotic. We are admitting or acknowledging that their development, their origin, often is through failure of emotional understanding of one's self, a flight from the painful, uncomfortable environment in which the individual finds himself, and that the disease manifestation is an expression of his conflict. It sometimes might be looked upon as a protective mechanism. When his nervous system can't longer stand the pressure and the uncomfortable, painful environment in the situation in which he finds himself, he takes flight to diseased, abnormal conditions.

I should like to point out or emphasize particularly the great psychotherapy of understanding thyself. (Applause)

Chairman Mitchell: The paper is now open for discussion, and we would be glad to hear from any person who wishes to discuss it. If you will rise and give your name, we will appreciate it very much.

Dr. L. G. Beall (Black Mountain): I think a subject which is of such importance to the general practitioner should not be allowed to pass without some discussion, and I am very glad to know that the essayist has shown his interest to bring such a subject before this Section.

Without doubt, we know that probably a large percentage of all medical questions and all medical diseases are tinged with some mental content. This may be fear, or inability to adjust themselves to situations or some difficult situation in which they have unfortunately gotten themselves, and take this method of escaping.

When we were in the army in France we know large numbers of the boys were evacuated back to the base hospitals with every kind of physical disability which had absolutely no anatomical or physical basis. We know that those physical manifestations of breakdown in their personalities showed themselves in physical disabilities—paralyzed arms, paralyzed legs, pains and aches of every form and description, vomiting, inability to see, inability to speak. We felt that the situation which they faced in the front line trenches was the underlying factor causing their breakdown. They couldn't flee, because they would be deserters. The idea of going over the top in that land of carnage and shell and shot where their comrades were being mowed down by the thousands, was such a great task in front of them that they were unable to bring themselves to the point where they could do that.

So what happened to these fellows was that they took refuge, subconsciously and without volition on their part, in some physical disability which caused them to be non-combatant. A man with a paralyzed arm can't fight—and they took refuge in those physical disabilities.

I am glad to see that the essayist has brought out the fact that the approach to the cure, or the alleviation of these conditions, is one of understanding and one of psychotherapy. We can't tell these patients to forget it. We can't say that what they have is an imaginary condition without violating what we do know about the working of the human mind.

A man comes to a doctor and says that he has a pain. We have no machine to evaluate that pain, but we should recognize the fact that the thought of pain can produce a real pain. The pain is real to that patient, and he feels it. He is very much incensed if you tell him that he does not feel it. But if you can explain to the patient why he feels a pain, then you have a method of cure for that particular patient.

I remember very distinctly an instance that came to me in my work of a young married woman. When she came to me it was absolutely impossible for her to walk. She had been bedridden for six months, and yet the woman's physical condition was such that she could have gotten out and plowed or hoed or done anything else which she wished, according to her muscular development.

The history showed that this young man whom she had married was the baby of the family, had never been able to get away from his mother's apron strings, had never been able to break loose from the dominating influence of his mother. Having gotten that history I began to build up in her mind the thought of a complete separation, or as an alternative, for her to wear the breeches in the family. She accepted my second suggestion. (Laughter)

When she did that she immediately began to improve, and within two or three weeks I had her walking about the room and later walking four, five, or six miles a day in blooming health. Color had returned to her cheeks, and when her husband came to see her she told him what to do. She went home and continues, so far as I know, today to tell him what to do, and she is entirely well in every way. (Laughter and applause)

Chairman Mitchell: Is there any further discussion of the paper?

Dr. Walter R. Johnson (Asheville): I am sorry I didn't hear but the last couple of sentences of Dr. MacMillan's paper, but from what Dr. Beall has said, I have a pretty good idea as to what his paper dealt with.

There is another large group of conditions which cannot be called psychoneuroses, because they are not so far advanced, but they are conditions which every one of us meets every day. They belong to the same general group. They are produced by the same general etiological causes. They do not have quite as dramatic manifestations and oftentimes they are far more difficult to solve than the type of case that Dr. Beall just mentioned.

In my own practice as a gastro-enterologist I would guess off-hand that probably fifty per cent of the patients that I see have various indigestion symptoms, such as gas, belching, heart-burn, nausea, vomiting, and so on, not as a result of organic gastro-intestinal disease, but simply as an aftermath of prolonged nerve strain, for instance, sexual maladjustment, marital difficulties, economic worries, prolonged sickness in the family, one thing or another that produces a condition that places the patient under a constant emotional strain. Sooner or later the patient breaks down with some type of symptom, and it happens to be my misfortune that the symptomatology very frequently is directed at the gastro-intestinal tract. Now, in the therapy of these patients, of course, the first thing is to decide by means of careful investigation or careful history and careful study that the condition is not an organic one, and then to begin the therapy, which is largely psychotherapy.

There isn't any royal road to the cure of these patients, and they certainly tax the ingenuity and patience of the physician to the very utmost. I, personally, think that it is far more important that we develop an understanding, a sympathy, and an ability to treat these patients than it is to learn to treat gallstones or duodenal ulcer.

It is relatively easy to take care of an ulcer, but it is a darn difficult thing to take care of a patient who is having symptoms because her husband is a chronic drunk and is running around with other women. That is the thing I have to contend with every day and is the thing that is going to cause gray hairs sooner than any other one condition, I am sure. (Applause)

Chairman Mitchell: Is there any further discussion of Dr. MacMillan's paper? If there is no further discussion, I will ask Dr. MacMillan to close the discussion.

Dr. MacMillan: I don't have anything to add. I am very grateful for the understanding discussion of this paper by the gentlemen who responded. Thank you.

Chairman Mitchell: The next paper we have is "Milk Sickness" by Dr. Hardin of Banners Elk. Is Dr. Hardin in the room?

. . . The Chairman was advised that Dr. Hardin was ill in the hospital and unable to attend. . .

Chairman Mitchell: I am very sorry that we haven't Dr. Hardin's paper.

The next paper on the program is by Dr. Turrentine, of Kinston, "The Clinical Application of Certain Procedures in the Diagnosis and Management of Allergic Cases."

. . . Dr. Turrentine presented his prepared paper. . . (Applause)

THE CLINICAL APPLICATION OF CERTAIN PROCEDURES IN THE DIAGNOSIS AND MANAGEMENT OF ALLERGIC CASES

By Kilby P. Turrentine, M.D., Kinston, N. C.

Mr. Chairman and Fellow Physicians present before the meeting of the Medical Section of the State Medical Society:

The title of this paper as given to you is "The Clinical Application of Certain Procedures in the Diagnosis and Management of Allergic Cases." Before entering into the subject as indicated by the title, it seems fitting to briefly consider some of the underlying principles of allergy. Let us get a working knowledge of the subject first.

Allergy should be reserved to mean those reactions occurring in individuals naturally hypersensitive on the absorption of specific atopens. By 'natural' hypersensitivity we imply an hereditary tendency and draw distinction between the acquired hypersensitivity of anaphylaxis. These individuals are endowed by nature with a system that will react or is capable of reacting in an abnormal manner. The abnormal reaction seems to be linked with a production in the system of a substance called 'reagin.' Reagin has been and is readily demonstrated biologically. It is produced in a given system because nature has endowed that system with such ability. We can think of reagin just as we have come to think of the immunological substances. Precipitins, agglutinins, etc. give protection while reagin gives the potential ability for abnormal reactivity. Reagins are specific just as are the immunological factors.

An atopen is the excitant or exciting factor in an allergic reaction. The particular atopen, be it wheat, dust or whatnot, produces the abnormal reaction, be it asthma, vasomotor rhinitis or whatnot, because of the presence in that particular system of a specific reagin. Both factors are essential. We may think of a particular person as having an allergic condition because of the combined factors of specific reagin in his system and the absorption of specific atopen. This is a qualitative consideration and the picture has to be broadened to include a quantitative consideration. The amounts of reagin and atopen required to produce clinical reactions varies in different individuals and perhaps varies in the same individual from time to time. An individual sensitive to wheat might eat one biscuit without symptoms but develop them when two or more are eaten. Also, this same individual might be sensitive to another atopen, say apple for example, and he might be able to eat one biscuit or one apple without difficulty but develops symptoms if one of each be eaten. The same might be true in a person highly sensitive with only minute amounts of the offending atopen or atopens. Further yet, we see individuals having one allergic condition from absorption of one atopen and another condition from a different atopen; for example, a patient may have urticaria from eating strawberries and hay fever from ragweed pollen, but never develops hay fever from the berries or urticaria from the pollen.

So much for the discussion to form a working knowledge of the subject of allergy. Our duty as physicians is to recognize those conditions which may be due to such hypersensitivity and supply the needed measures to afford relief. In order to secure this end we have at our command several different diagnostic procedures, many of which do not require special equipment or detailed knowledge of the field of allergy. Every one of us can relieve many of these unfortunate individuals. My purpose is to list the diagnostic procedures employed and point out by exemplary case reports the results obtained in some instances by procedures any physician can readily employ.

An outline of these procedures can be listed as follows:

1. Skin test
   - A. Dermal
   - B. Intradermal
   - C. Subcutaneous
   - D. Patch test
   - E. Passive transfer
   - F. Physical allergy
2. Special procedures for foods
   - A. Food diary
   - B. Elimination diets
   - C. Eosinophilic Index
3. Special procedures for inhalants and pollens
   - A. Pollen counts and identification
   - B. Intranasal
   - C. Ophthalmic
4. Autogenous Vaccines and extracts.

The cases about to be presented were given a complete examination and such laboratory study as seemed indicated and selected for this paper because there were no concurrent disease conditions. Therefore, with each case these studies will not be listed and only the essential features of the histories given.

First Case: The first case is that of a white female, age 41, who came under my observation in August, 1934. She gave a history of asthmatic attacks over a period of eleven years, and for the past four years she had had asthma almost daily. A few days before coming to me she developed generalized scattered urticaria, which was something new to her. She had been given a partial allergic study in 1931 and 1932 with negative results. There was a family history of asthma and her son has fall hay fever.

A complete series of skin testing was done. The reactions were as follows: To the dermals there were definite reactions to raspberry, strawberry, kidney bean and rye, and borderline reactions to barley, glue and orris root. To the intradermals there were definite reactions to peas and

beans (three plus) and banana (two plus), and borderline reactions to wheat, rye, celery, carrot, and ginger.

She was placed on a diet eliminating all of the foods and in 24 hours the rash began to subside. In three days the rash was gone and there was a decided improvement in her asthma. In one week she was entirely free from asthma. During the next three months she remained free of symptoms but during the first part of the fourth month she developed an acute cold and had asthma for two days. Since then she has remained free of symptoms except for the times when her diet was being changed for trial purposes. By trial we found peas, beans and wheat would cause asthma and bananas would cause urticaria. A recent check-up revealed no difficulty during this three year period if diet followed.

This case demonstrates the value of skin testing in some individuals. A review of the case reveals that there were false positive reactions to some of the articles of diet. Here it seems fitting to say that skin testing is not 100% reliable and that the reliability of such test for foods seems to be in the neighborhood of 60%. This case also shows that the intradermal test is usually more reliable than the dermal test, for all of the offending atopens reacted in the intradermal series and only the kidney bean extract in the dermal series. Perhaps the reason for the negativity of results in 1931 and 32 is explained on this basis because only the scratch method was employed those times.

Second Case: This patient was a young boy, age 5, referred to me for allergic study. He had recently been examined by a competent eye, ear, nose and throat man and a competent pediatrician. The diagnosis was allergic rhinitis and underweight. His symptoms were daily nasal congestion and rhinorrhea. No allergy in family history.

On March 14, 1935, examination of his nose revealed a pale, boggy swollen nasal mucous membrane. Nasal smear showed eosinophilic count of 24%. Skin testing was attempted but had to be abandoned. Passive transfer was decided upon. His blood serum was obtained and diluted with equal parts of a carbolized saline solution. The next day areas on the mother's back were rendered passively sensitive by injecting .02 cc. of this solution intradermally. The following day the skin testing was begun by placing test over the sensitized areas and duplicate test over adjacent normal skin areas. The complete set of ingestants, inhalants, and bacterial extracts were so tested. The only reactions of borderline or better significance were to several of the wheat extracts in the dermal series and the whole wheat extract in the intradermal series.

The patient was placed on a diet to exclude all wheat products and instructed to keep a food diary. At the end of one week there was a decided lessening of his difficulty. The second week he was entirely free of symptoms until one day when he ate an ice cream cone away from home and symptoms returned. Thereafter he remained symptom free for six months. Also, he was eating better and gaining weight at the rate of one pound per

month, whereas prior to this time his weight had been stationary for several months. We decided to try him again on wheat and to our delight found that he could eat any quantity without symptoms. One week ago I had a report from this patient and found that he still continues without symptoms on a full diet. In addition, his weight is now normal for his size and age and his appetite is good. His mother said that he acts, eats and seems like a different boy.

This case is presented for several reasons other than the striking results. It demonstrates the method of passive transfer and the fact that there must be something in the boy's system that influences the allergic reaction, which we have already labeled 'reagin' in the introductory remarks. To see the reactions on sensitized skin areas and the lack of such on normal skin areas to the same atopen extracts is indeed a biological test that cannot be denied or underestimated. This case was worked out according to the lines of procedure employed by most men doing special work in allergy. However, an after-consideration of the case reveals that the same end could have been accomplished by the use of food diary, elimination diets and trial periods for foods.

Third Case: The next case presented a more difficult problem. This was the case of a white male, age 38, coming under my care in August of 1934. He gave a history of giant urticaria and angio-neurotic edema daily for eight or nine years. His account of the difficulty was interesting. Some of his statements were, "At times one eye would be swollen and at other times the other eye would be closed by swelling; there were times when the shoes could not be worn and his feet would swell at times while he was away from home, causing him to have to remove the shoes and go barefooted, which troubled him no end on cold days and at certain gatherings; there were times when he could not get his hand in a pocket because of swollen finger or fingers; there were times when the hat could not be worn because of a lump on his head; etc." There was a family history of allergy.

This man had been given an allergic study in 1931 with negative results. This was repeated only a few weeks ago with similar results, and a complete diagnostic examination and five weeks of hospitalization for observation had failed to afford relief. The latter study was terminated with a diagnosis of urticaria due to 'intrinsic factors.'

He had about made up his mind to call his case hopeless and it was with difficulty that he was persuaded to undergo the routine testing again. The complete set of tests proved to be negative except for a two plus reaction to oat. This man had not been eating oat and obviously this was a false positive reaction. He was instructed in the keeping of a food diary and asked to bring it back every ten days. In ten days he returned with the diary, examination of which revealed those foods taken daily and the foods available to form an elimination diet. (Here was a case with limited foods to select from because of rural residence and limited funds. The diary was requested so that the foods might be determined in black and white.) The

articles of diet eaten daily or almost daily were wheat, Irish potato, milk, hog meat and tomato. From the remaining foods on the diary the following diet was selected: rice, spinach, pears, apples, peaches, sugar, salt, gelatin, corn, corn syrup, chicken and peas. He was to continue the diary with these foods and return in ten days.

Five days later he returned to the office with this statement, "Doc, I think we are getting somewhere!" On inquiry I learned that he had not experienced edema and had had far less urticaria than usual. Referring back to the diary and diet we found the only article prohibited that might still be in his present diet was hog meat. On questioning we found home made hog grease was used to prepare his cooked foods. He was advised to stay on the diet and in addition to secure a vegetable lard for his cooking, namely Crisco, and report back in ten days with the diary.

It was three weeks before I saw this man. He had come to town to attend a circus and stopped by the office just to let me know that he was symptom free. He was advised to add one food at a time back to his diet over a four day trial period and requested to return in thirty days. It was in the fall of 1935 before I saw him again. He then told me that a full diet was being taken except for hog meat and lard and there were no symptoms as long as these articles were avoided. He was delighted and at this time he paid for the allergic study.

This case serves to demonstrate that skin testing is not all that can and often needs to be done in an allergic study. In this particular case there was only one offending atopen and the skin test to it was a false negative test and therefore I missed its detection just as the two former studies had done. It was the bringing of other diagnostic procedures into use that enabled me to succeed here.

At this point it seems fitting to say a few words about food diaries and elimination diets. A food diary need consist only of a cross ruled sheet of paper, the lines so placed as to form small regular perpendicular and horizontal rows of squares. Along the left margin of the page the foods are to be named by writing in each food eaten opposite a row of the horizontal squares. At the top of the first row of perpendicular squares the date of that day is inserted. Such a blank diet sheet can be drawn by yourself or your office girl in a few minutes. The patient is instructed to write the names of the foods taken on the first day and place a check beside them in the first row of squares. On the second day the foods repeated in the diet are checked in the second row of squares and any food not already appearing on the sheet is written under the column of foods and likewise checked in the second row. This is continued in similar fashion each day. On another sheet of plain paper the patient is asked to keep a record of symptoms believed to be allergic with dates of appearance. In two, three or four weeks have the patient bring the records to you. On the dates of difficulty draw a colored line down through the underlying squares. After so marking all dates of difficulty, then look over the sheet and pick out

those foods most regularly appearing on dates of difficulty but rarely appearing on other dates. In this manner suggestive clues will be obtained. Have the patient omit your suspects and continue the diary. Repeat this as many times as is necessary to gain the desired information or until you feel that the possibilities of this scheme have been exhausted. Where the difficulty is intermittent and caused by article or articles of diet, this diary sheet correctly analyzed will often reveal much.

Elimination diets have been in use by the medical profession for many years. Those diets advocated by Dr. Rowe in his book "Food Allergy" and widely copied in many articles suffice admirably in many cases. At times you may have to work out an elimination diet according to lines followed in one of the cases reported. Such diets need no further comment here. I only suggest that you keep changing these diets from time to time until you get results and do not lose faith too soon. In using the elimination diets, as is true in doing any procedure for the allergic sufferer, bear in mind that you are dealing with a chronic condition which may take months to solve and remember that you possibly have more to ultimately offer these patients than you do many of your chronic cases of other types. The majority of the men doing clinical allergy as a specialty do not consider the possibilities of any case exhausted before it has been under observation for six months or longer, and you will find that this is a sound procedure before you have handled many of these cases. Often the solution does not become apparent until just before the procedure is about to be abandoned.

SUMMARY AND CONCLUSIONS

1. A brief account of some of the underlying principles of allergy has been presented in the hope of forming a working knowledge of the subject.

2. Three cases have been presented, all of which demonstrate the value of allergic work for certain cases; the first case demonstrates the value of skin testing; the second case demonstrates the values of skin testing, the technique of passive transfer, and gives a better understanding of some of the principles of allergy; and, the third case demonstrates that skin testing is not always reliable and is only one of several procedures, that food diaries are essential in many instances and could be used in many instances without skin testing, and introduces elimination diets with a word about their application and value.

3. The cases presented were selected cases and I would not have you believe that all cases are so readily handled or solved, nor are the results always so striking. Do not expect such immediate results from your own work and do not expect them in or promise them to those patients you may see fit to refer to a fellow physician making a specialty of allergy. If you will recognize those conditions perhaps due to allergy and make attempts to handle them along such lines, you will be practicing that phase of medicine according to the standards of our present day knowledge. Before starting the management of any allergic case bear in mind that you

are dealing with a chronic condition that perhaps will not be relieved by other measures and a condition with very elusive causative factors which may require months to detect.

4. In this paper I have purposely avoided detailed discussions and hope to have avoided controversial considerations. I thank you.

CHAIRMAN MITCHELL: You have heard Dr. Turrentine's paper and it is now open for discussion. Anybody wishing to discuss it will please rise and give your name as you get up.

DR. BANNER (Greensboro): I think Dr. Turrentine has given us a very valuable contribution here, and as I have attended several meetings recently, it seems that the subject of allergy has seeped into the literature and has come to the attention of medical men all over the country more and more. I was particularly impressed by Dr. Turrentine's paper because he emphasized not only the importance of different tests that we have, the more or less mechanical ways that we have of going about detecting the specific sensitivities, but because of the fact that he pointed out that the food diaries and the elimination diets play a very important part, particularly in those cases that are perennial cases of asthma.

The cases of urticaria that remain unsolved, and the mere fact that a case does not respond to a certain series of skin tests, shouldn't discourage the man in practice or the allergist.

I was recently impressed by Alvarez, who discussed allergy in relation to gastro-enterology, and I suppose there is probably a mention there that the gastro-enterologist is quite aware of, that a good many of our stomach and intestinal problems probably can be solved on the basis of a food diary or an elimination diet.

Alvarez was very emphatic in his statements in encouraging that we attempt, in those cases that do not respond to psychotherapy, the food elimination diet. As Dr. Turrentine has mentioned, we don't have to adhere to any particular type or role of diet.

Of course, Rowe was one of the early pioneers and a lot of what we do is probably modeled according to his original elimination diets.

The foods that Alvarez uses are those foods that he has found to be more or less—I should say less rather than more—sensitivities. In other words, he uses the wheatless bread—Rycrisp is one of the commercial makes—and then lamb and rice and canned pears. That seems to be one of his pet combinations.

He tries his people, puts them on that diet, and he will hold them to it for several weeks. It seems to give them enough to take care of their vitamin and mineral intake. One statement he made recently that I was rather amused at was the fact that he was referring to a case that had come from some distant country, and in which he advocated this diet, and that patient said, "No, doctor, of course I can't follow this diet," and so

forth, which in his mind automatically classified that patient as a pure psychoneurosis.

Dr. Turrentine mentioned that about sixty per cent give positive skin tests in these food sensitive cases. I feel that that probably is a little higher than in my cases, but nevertheless, that is about in the vicinity. I don't find that I get quite as much assistance from my skin tests as that. I wish I could.

One point I was interested in, that I spoke to Dr. Spain about, was the question of bacterial sensitivity. I would like to ask Dr. Turrentine, while I am on my feet, how he feels about doing skin tests with vaccines, either autogenous or stock vaccines? Then, too, inasmuch as we are discussing the general subject of allergy, apparently about the country—at least at this paritcular meeting I attended, the College of Physicians—there is a feeling that there was a great deal of lipiodol used in these chronic asthmatics. I want to ask him what his feeling is about the use of lipiodol in these chronic asthmatics. It seems that Coke and Spain up at the Post-Graduate Hospital in New York are sending out a note of warning about the too frequent and too liberal use of lipiodol, and yet in the literature, as I have been able to observe it, more and more men are getting very, very encouraged about the results they are getting, and not only that, but they don't hesitate to use ten and twenty cc.'s of lipiodol two or three times a week over a period of fifty to sixty weeks.

I have tried a few cases on lipiodol, and frankly, I feel that I am getting fair results with it, but I would just like to get an idea of the opinion of some of the men and would like to get a reaction here as to how the men feel about lipiodol. (Applause)

Chairman Mitchell: Is there any further discussion on the paper?

Dr. David T. Smith (Durham): In listening to this paper, it occurred to me that I would like to ask Dr. Turrentine to confirm this: that actually the family physician is in a better position to analyze the history and to try a diet, an eliminating diet, than the asthmatic specialist. I think he knows his patient better. The patient can get in to him better without much expense.

I venture that a careful history or careful eliminative diet would perhaps solve a third of the cases and not make it necessary for those patients to go to the asthma centers.

Chairman Mitchell: Is there any further discussion on the paper?

Dr. Hugh A. Thompson (Raleigh): I was particularly interested in the question the last doctor brought up. I have used lipiodol a couple of times. One case had a thorough study and vaccine had been used. There were two vials prescribed and one vial had been completed and the second about half finished and the patient had not had any results from that. I tried lipiodol, and, when on the second injection I got a good amount in the lung, I got results. I gave this patient about twenty cc.'s, continued

at weekly intervals, gradually stretching out and then cutting down the dose.

I got down to ten cc.'s about every three weeks and the patient then got a return of symptoms. I had her come back to my office and I put twenty cc.'s in and she has been entirely free of symptoms since. I gradually increased it to about a month.

I did not get any reaction from the lipiodol in these two cases on weekly intervals of twenty cc.'s, but I gradually stretched it out.

The other case did not have an allergic study, but I got very good results. On x-ray she had a little bronchiectasis at the right base and I thought that was probably the cause of the asthma.

CHAIRMAN MITCHELL: Is there any further discussion? If not, I will ask Dr. Turrentine to close his paper, please.

DR. TURRENTINE: Thank you for your discussion and questions, gentlemen.

As to Dr. Banner's question first, about the bacterial asthma and the skin test of that: I don't think that skin tests are very reliable in showing reactions to bacterial extracts of vaccines. Personally, the way I arrive at such a diagnosis of bacterial asthma or vasomotor rhinitis, or what not, is more by thoroughly studying the case out along other lines and eliminating those possibilities, and consideration of the history and observation of the patient when he has an attack from time to time. I don't think a skin testing to the bacterial vaccines is of much value.

Some men say, "Observe them not only for immediate reaction but delayed reaction." I have done it both ways, and most of the time I have to make that diagnosis from the history and watching the patients through several attacks.

The question about the use of lipiodol: I have not used that myself. I have had some patients that I referred to eye, ear, nose and throat men, bronchoscopists who did lipiodol injections on the patients, the patients with bronchiectasis, bronchial infiltration; and even cases of chronic bronchitis and asthma seemed to be together. The results were palliative, some lasted three weeks, some lasted a month. Those patients were given autogenous vaccines and stock vaccines at the same time. They did not respond to that type of therapy and they have to keep going back to get the lipiodol.

Dr. Smith's discussion I thank him for, because my purpose in presenting this paper was to try to get the general practitioner to see how easy it might be for him to keep an elimination diet or keep a food diary with his patient, and I think that the majority of this type of patient, if the physician will recognize the condition as possibly allergic and make some attempts to handle it himself, I think he will relieve a great number, and if he should fail to do so I think only then should we refer him to a specialist.

As to the discussion about Dr. Alvarez' findings' believing that the great number of gastro-intestinal complaints are due to food disagreements which may be classed as allergic, I have seen a number of those patients and the ones on which I could not establish a family history of allergy, and on which there were no other allergic manifestations, I did not attempt skin testing.

I resorted to elimination diets and food diaries and solved a great number of these cases. Of course, no measure is going to solve all your cases.

Thank you.

. . . An announcement was made regarding the House of Delegates' meeting. A short recess was taken at this time. . .

CHAIRMAN MITCHELL: We will first ask for the report of the nominating committee for your Chairman for the 1937 Section on the Practice of Medicine.

DR. JAMES W. VERNON: Your nominating committee has decided to present to you for your consideration for your next Chairman Dr. Coite L. Sherrill of Statesville.

DR. A. B. HOLMES: I make a motion to accept the report of the nominating committee.

. . . The motion was duly seconded. . .

CHAIRMAN MITCHELL: Are there any other nominations? If not, we will have the question. All in favor of Dr. Sherrill, please say, "Aye"; all opposed, "No." Dr. Coite L. Sherrill will be your Chairman for 1937.

The next paper we have is by Dr. A. B. Holmes, Fairmont, "Malignant Hypertension."

. . . Dr. Holmes presented his prepared paper. . . (Applause)

MALIGNANT HYPERTENSION

By DR. A. BYRON HOLMES, Fairmont, N. C.

This subject has not been selected because I have anything new or original to present, for all I have to say, I am quite sure, will be things you already know. The fact that hypertension is one of the most frequent, and often one of the most serious conditions, that we are called to treat is my reason for presenting this subject to you, and also, with the hope that a clear-cut discussion will be the result. It is probable that no condition has created more interest or called forth more investigation of both the laboratory and of a clinical nature than has the condition designated malignant hypertension.

May I call your attention to the histories of two patients pretty characteristic of the entity we call hypertension? The first history is rather interesting because a white man, seventy-four years of age, feels subnormal

for the first time. He has labored on a one-horse farm all his life. He says his family died from old age and natural causes. In other words, his family history, and family history is the point I am going to stress, is negative. No family history of cardiorenal disease or diabetes. As far as his past medical history is concerned, it is equally negative; no history of major infections. He denies lues, he denies scarlet fever, and he denies rheumatic fever. He considered himself a perfectly well man until six weeks ago when he noticed pain in his legs termed by him neuralgia, no doubt vascular in origin.

Fourteen days after he first noticed that he felt below par, he began to note swelling of the abdomen and shortness of breath. He attributed the shortness of breath to the swelling of the abdomen, putting the cart before the horse. The abdomen enlarged, his dyspnea increased, and he had a very troublesome frequency of urination by day and by night. He noted an ankle edema.

On examination he was dyspneic and orthopneic and obviously cardiacally decompensated. Visible tortuous temporal arteries. Pupils equal and round, slight senile cataract, retinal arteriosclerosis but no exudates or hemorrhages. Chest examination reveals a spare thorax of an elderly man, with little, if any, limitation of movement, with normal sounds except over right base from which 450 cc. of a nonpurulent, straw-colored fluid was removed. No increased area of visible pulsation over the precordia, no abnormal pulsation over the base of the heart, and on palpation only a moderate cardiac impulse. No shock or thrill felt over the base or apex. The fluoroscope revealed a shadow extending almost to the neck, a shadow which was interpreted as a dilated aorta, and contrary to all expectations there was no atheroma of the aorta. The fluoroscopic examination also reveals that there is an enlargement of the heart, one and a half fingers breadth, to the right of the sternum, and about two fingers breadth outside the nipple line, so there is enlargement of the heart, especially to the left. On listening to this heart there was heard a murmur at the apex, soft and blowing, systolic in time. No diastolic murmur was heard over the base, but there was increased intensity of the aortic second sound, quite in keeping with the patient's age. So we have a dilated aorta without atheroma, a dilated hypertrophied heart with a slight systolic murmur at the apex, an accentuated second sound though of no great note. As a rule one does not look for high tension in a patient seventy-five years of age, yet his blood pressure readings were around 220 systolic and 130 diastolic. No evidence of coronary disease. There are some myocardial changes, but those consistent with a man of his age. All laboratory reports normal: urine contained no albumin or casts, blood NPN, and creatinin normal, Wassermann and Kahn negative, no anemia or leukocytosis, so one can safely say that the condition is a hypertensive one. From the fact that the patient had reached the age of seventy-five with no more evidence of cardiovascular disease than he has, the course of the disease is a very

benign one. He responded promptly to bed rest, thoracentesis and some cardiac stimulation and lived four years to die from pneumonia.

The second patient was a druggist, thirty-five years of age, seventy-one inches tall and weighed 148 pounds and obviously was a very sick man. He was lying flat in bed, irritable, restless and hard to control. There was no edema of the eyelids, pupils were dilated but the reaction to light and accommodation was normal. Eyegrounds showed arteriosclerosis with hemorrhage throughout each fundus. The mouth, nose and throat were normal. There was a heavy odor to the breath. There was no palpable enlargement of the thyroid, and the vessels of the neck did not markedly pulsate. The chest was of the small male type and nothing abnormal in the lungs was found. Heart showed a marked pulsation with point of greatest intensity in the nipple line. The heart was greatly enlarged especially to the left. No thrill or shock. Some increase in the first and second sounds and a ringing aortic second sound at the base. Aorta dilated but no atheroma. The abdomen revealed nothing abnormal except the liver was enlarged about two fingers breadth. The limbs showed nothing and all reflexes were normal. Blood pressure 260/140. Electrocardiogram showed left axis deviation due to hypertrophy of the heart and definite evidence of myocardial damage. The urine contained albumin and granular casts. There was no anemia or leukocytosis but the blood contained 140 milligrams of urea and 5.6 milligrams per cent of creatinin; evidence of severe kidney damage. Wassermann and Kahn tests negative. The progress of the disease, in this patient, was constantly downhill and he died, six weeks from the time he noticed that he felt subnormal, from a cerebral accident.

The family history which I am going to give in detail shows apoplexy in both his father's and mother's families for three generations. The noteworthy thing about this apoplexy is that it occurred in those during the prime of life—35 to 50 years.

Personal history: as a youngster he was the leader of the gang-in-the-streets; at school he was one of the leaders, a Phi Beta Kappa, a three-letter athlete. His post-medical history is negative for acute infections; he denies scarlet fever, and that is one thing that would enter into the problem here because of the possibility that we are dealing with glomerulonephritis. He has had no special trouble with the nasopharynx. He used the usual stimulants but in moderation—tobacco in moderation, alcohol in moderation. The only significant thing I can find in his past history is a so-called nervous breakdown, two years previously. I think if you will look over your histories of cardio-vascular diseases you will find nervous breakdowns a frequent thing. The so-called nervous breakdowns loom large in medical history of hypertension.

Arterial hypertension is only a symptom. The work of Keith and his associates at the Mayo Clinic prove that while many cases of essential hypertension run a benign course, sometimes of many years duration, as was true in our first patient, others are associated with a shorter and more

stormy course and described by the term malignant hypertension. O'Hare has described essential hypertension, "a circulatory disorder characterized primarily by high blood pressure, involving more or less generally the arterioles of the body which causes a diminished blood supply to various organs and consequently a secondary atrophic change."

The exact factor for hypertension is still unknown and I will not take up your time discussing the numerous theories. But there are certain predisposing factors I would like to stress, and these are heredity, overwork, especially of the nervous system, and over-eating. I have my doubts whether infections, such as typhoid; or intoxications—even tobacco and alcohol, play any significant role.

O'Hare divides the course of hypertension into three stages. "A" is the prehypertensive stage, lasting for the first thirty years of life. If you will watch the children of the hypertensives, you will usually find that they are robust, bright, nervous, with sweaty red hands and are generally the smartest children in school. As the child reaches adolescence he becomes the leader of the gang-in-the-streets, the leader of his class in school and is often the captain of the football team. If the patient is a girl she is usually of the same type, a leader in school and full of mischief, and is usually a sufferer from menorrhagia. The patients during the first thirty years are not complaining because they have no symptoms. When they reach the age of thirty years they are usually well established. It is among them that we most often find so-called high-pressure salesmen and good executives; as professional men they are already showing success in the practice of law or medicine. Then for some reason their blood pressure is taken and found to be 160 or more. Usually at this stage they begin to complain. This is the "B" or intermediate stage. Then they reach the "C" or the hypertensive stage with a constantly high blood pressure and the various symptoms that are the result of the high blood pressure: dizziness, vertigo, headaches, irritability and the inability to adapt themselves to the various situations that confront them. As early as thirty-five or forty years, a cerebral accident may take them away or result in a crippling physical or mental condition. Anginal attacks may follow, or even a thrombosis of the coronary artery. In the benign condition, as our first patient, the urine may show only a small amount of albumin with good renal function. In malignant hypertension, malignant nephrosclerosis, the condition soon goes on to complete insufficiency and uremia. This type is usually found in the younger patients, as our second patient, and rapidly progresses. We are all familiar with the fat middle-age diabetic with other evidence of arteriole disease. Occasionally intermittent claudication with gangrene of a foot may occur.

As in the treatment of all degenerative diseases, after the condition has developed, there is none. But if we recognize this condition in the "A" stage or even the "B" stage of development we can, with the cooperation of the patient, certainly aid them to delay the "C," or malignant stage. To

business and professional men we must tell them to slow down from fifty miles an hour to fifteen. Go on a vacation. Tell them to cut down on their eating. Very often we will be told, "I never drink or smoke," but watch him eat. Give him a well balanced diet but limit the protein and salt intake. All these patients are potentially insufficiency ones.

As to drugs, none of the vasodilators have been worth anything in my hands. I have tried them all, as they have been reported in the journals. If you must give a drug, give potassium iodide, and if there be a syphilitic taint, perhaps you may get some results. If we can get these patients to take plenty of bed-rest, limit their eating, get away from business at stated intervals and when at work to limit the amount of work they do, and lead a quieter life and a more sedate life, most often we will see our patient's life prolonged. On the other hand, when we see a patient like our second one, there is nothing beneficial we can do, except, perhaps, make their last days more comfortable by the judicious use of the opiates.

Chairman Mitchell: You have heard Dr. Holmes' paper on "Malignant Hypertension." It is now open for general discussion.

Dr. F. R. Taylor (High Point): This is a subject that concerns us all. Personally, I think this question of hypertension is a highly individual one. No one can foretell in a given patient just what measures will be successful or whether it is one of those types of hypertension which, as McCrae has said, we can do just as much for as we can for gray hairs.

But there is a small percentage of patients—we do not know enough yet to say who is in that group and who is out of that group as an individual—with hypertension, who will be cleared up by the removal of infection. Therefore, I think it is good practice to search for foci of infection, remove them, and tell the patient at the same time, "I don't know that you are going to be benefited by this, but it is worth a trial, there is a mathematical chance for it to help you."

Personally, I have been accustomed to using theobromine almost routinely, or some derivative coupled with barbiturates. I use the theobarb tablets. For some patients they are apparently useless. Others appear to be helped by them, and I can't say I have ever seen anyone hurt by them.

Perhaps the most interesting thing in the subject of "Hypertension" today is the question of operative treatments, though whether that should be discussed before this Section, or before the Section on Surgery, is a question. Is the surgeon going to take hypertension out of the hands of the physician? I rather doubt it. But it is food for thought and something we ought to be thinking about, whether we like it or whether we disapprove of it.

Dr. E. F. Allen, of the Division of Medicine at the Mayo Clinic, and Dr. Adson, Chief of the Division of Neurosurgery, have been doing some interesting work along this line. Dr. Crile has too.

Adrenal denervation seems to me to be definitely out. There are cases

on record of Addison's disease resulting from adrenal denervation. I would not advise any patient of mine to have it.

Adson's operation is another matter. Judging from Adson and Allen's reports, if all the reports were equal to theirs, we might well conclude that hypertension in all its phases was no longer a medical matter—but a surgical affair. However, I am beginning to get rather skeptical of that, though I have no experience with the operation. I had thought of sending some patients, if possible, to the Mayo Clinic for that work, but I now believe it would be advisable to write Dr. Henry A. Christian first and get his reaction on it, because I suppose there is no man in the world who knows more about it from a medical standpoint today than Dr. Christian.

Dr. Christian tells me he has known a number of patients in whom the results had been less satisfactory than in the reported cases of Addison and Allen, and that he was rather skeptical of the final results. It is too soon, of course, to evaluate the final results, but there are some very definitely poor results that have not attracted much notice. At least if they have gotten into the literature they haven't attracted such wide notice as Allen and Addison's work. I think that Dr. Christian feels that there is a natural enthusiasm with the originators of certain procedures, that Allen and Addison have this natural enthusiasm, and that as time goes on possibly the pendulum will swing back the other way and we will find that after all surgery has not yet said the last word, or perhaps a very important word, on the subject. However, it is an interesting question as to whether these patients who do not yield to treatment of focal infection by other methods should be submitted to operation.

Dr. Christian, in discussing a specific case, said, "The point is not so much what his blood pressure is. I had one patient under observation for several years, though he had no serious symptoms. He just got nervous when his blood pressure got over two hundred, and he is still only thirty-nine years old. It is rather a question of how well a man has lived and how happily. If he seems to be getting along reasonably well and is reasonably happy, don't monkey with him by sending him for any operation of that sort."

Then, of course, if a patient has had some accident or has a bad heart or is seventy-five years old, as this very interesting and rather unique case Dr. Holmes has told us about—I don't think I have ever seen hypertension in a man that old myself—if he has got to that stage he is not a fit subject for operation.

Chairman Mitchell: Is there any further discussion of Dr. Holmes' paper?

Dr. O. L. Sharp (Greensboro): I would like to ask Dr. Holmes a question in regard to the matter of diet. He brings out the elimination of proteins, and that is a rather interesting subject. Mosenthal, of New York, and his associates have done a great deal of work in regard to the matter of proteins, and they have about concluded, after study of a large series

of cases, that proteins are most essential for the patient's well-being, except, of course, in patients with nephritis.

When I was in college Dr. Hobart Hare taught us that there was no reason to leave proteins out of the diet unless there was some evidence of kidney damage. Holmes had the same teacher. I take it from Dr. Holmes' discussion that these patients do not all have kidney damage and therefore proteins are not necessarily left out of the diet.

It has been my observation that probably these patients are better off not to eat so much, as Osler says in his text book, revised by McCrae. People who have worked hard, drunk hard, and lived hard are the victims of hypertension. I believe these things are factors, and we all know that over-eating is.

There is one thing Dr. Holmes didn't bring out. I believe alcohol is a definite factor in hypertension. I believe that the man who takes his daily drink, or maybe two drinks a day, of Scotch and soda, or whatever he might like, sooner or later develops a cardiovascular complex, whether he has a kidney involvement or not. My impression is that Dr. Holmes does not attach import to this feature.

In regard to the question which Dr. Taylor brought up relative to the operations, Wright and others of New York City who have done a lot of work on vascular disease, feel that probably this thing is only temporary, it lasts for a short time only.

Some authorities feel that the work of Adson and Crile may probably give some tendency toward, if not a definite Addison's disease. It looks to me like the surgeons must go a little farther if they are going to take this thing out of our hands.

I believe that most men who treat hypertension would be delighted if somebody would find something that would relieve us of this situation, like insulin has almost relieved us of the serious side of treating the diabetic.

Chairman Mitchell: Is there any further discussion?

Dr. Emil B. Cekada (Durham): I don't know very much about hypertension. I haven't been practicing long enough to really understand all of the phases the older men have come across, but it does seem to me that we do forget the main points of hypertension in that group of organic diseases which apply to the kidney.

But Dr. Taylor mentioned in the letter of Dr. Christian that matter of whether the patient has lived happily and contentedly. That has a great deal to do with the general subject of hypertension, if one takes the word of scientists. Where people are more phlegmatic and certainly less active, and work under the less nervous strain, one finds a great deal less among those people.

You will find in many cases of early hypertension in people between twenty and thirty and thirty-five that the elimination of the irritative

things in the daily life will have a great deal to do with bringing their blood pressure down.

As regards the high blood pressure in your alcoholic, I happen to have been born in a community which is very well known for its long lived men, and women both, and also where drinking was a daily habit. I certainly can't believe that there is any connection between alcohol and hypertension.

CHAIRMAN MITCHELL: Is there any further discussion?

DR. ROBERT L. FELTS (Durham): I don't think there is any question in medicine that requires more attention than hypertension. It seems to be a disease of present day living more than any one thing else. I quite agree with the essayist that alcohol plays very little part in its producing.

I remember in my early days when we first began to take blood pressure, one man who used to remark that he had drunk enough whiskey to float the Great Eastern, and yet that man's pressure was never over 120, and in my observation since then I have seen more high blood pressure, more often, in those people who are over-eaters rather than those who are over-drinkers.

It is a very interesting subject, and I think we know very little about curing it.

I do think that we see hypertension often in high school children, and I have seen children from fifteen to sixteen and seventeen years old who had a blood pressure from 130 to 140 at that age. It strikes me that school athletics probably have been stressed rather much in those boys. If we follow them we find often that those are the young ones who, between thirty-five and forty, will have their cerebral accidents.

CHAIRMAN MITCHELL: Is there any further discussion? If not, I will ask Dr. Holmes to close.

DR. A. B. HOLMES (Fairmont): In the history of the two patients given in my paper, everything was reported as found, and I think in the body of the paper I said to limit the protein intake, give a well balanced diet but limit the protein intake. That is the way I see it.

I think, gentlemen, you will find in these situations that heredity plays a more important part than any in cases of hypertension. That is like this old man of seventy-five who weighed 220. He lived happily and worked all his life. Then he lived four years with a blood pressure of 220 and died from pneumonia.

This man who was a druggist was, when a youngster—I knew him at the time—the most active youngster you ever saw, robust, red-faced, leader of the kids in the street. When he entered school he was the smartest man in school, Phi Beta Kappa, a three-letter athlete. That is the type in which we find this malignant hypertension.

Personally, I think heredity is very important, and I have, I believe, something more than 300 histories in my files. It comes on down. This

druggist in this paper had apoplexy in his family for three generations back, not only on the mother's side, but the father's, and it occurred during the prime of life, 35 to 40 years of age. These fellows tell you they don't smoke, they don't drink, but if you ever get a chance, watch them eat. They will eat more in one meal than they should eat in two days. Heredity and over-eating, in my opinion, is what we are having to contend with.

In none of these patients with malignant hypertension was there any history of alcohol. Several of them not with malignant hypertension were inveterate drinkers, but my records show no malignant hypertension in them. Quite a number of patients were poisoned with lead and were suffering with lead colic, yet they had normal blood pressure.

When it is all said and done, the general practitioner knows his families and has their histories. He can catch these boys and girls when they are in primary school, take care of them, because after this condition that we term malignant hypertension develops, their case is absolutely hopeless. (Applause)

Chairman Mitchell: We are to have the pleasure of having Dr. David T. Smith, of Durham, give us a paper on "The Use of Liver Extracts in the Treatment of Pellagra." Dr. Smith has done quite a good deal of work on the subject and if I am not mistaken I think Dr. Smith presented a paper similar to this about three years ago before this Section. He has continued the work. He doesn't think, I imagine, that he has finished the subject, but he has continued to work on it, and I think we are very fortunate in having Dr. Smith give us a talk on the subject.

. . . Dr. Smith presented his prepared paper. . . (Applause)

THE USE OF LIVER EXTRACTS IN THE TREATMENT OF PELLAGRA

By David T. Smith, M.D., and Julian M. Ruffin, M.D.,
Department of Medicine, Duke University,
Durham, N. C.

Pellagra was described by Gaspar Casal in Spain in 1735, and was thoroughly studied in France and Italy during the next century. Occasional cases were recognized in the United States between 1864 and 1900. There was an explosive outbreak of this disease in the South between 1905 and 1915, and it still causes more deaths than any of the communicable diseases with the exception of tuberculosis, pneumonia, and influenza. The rapid spread of the disease, its high mortality, and the toxic appearance of the patients quite naturally led many Southern physicians to believe that pellagra was an infectious disease.

Even after Goldberger and his colleagues showed conclusively that pellagra could be prevented by an adequate diet a large proportion of the medical profession of the South was still reluctant to accept the diet theory as the only etiological factor in pellagra. Goldberger's success in producing

pellagra in convicts with a deficient diet did not produce the conviction which it should have, because his patients did not show the profound intoxication which is so common in severe pellagra.

When the Duke Hospital opened in 1930 we chose pellagra as a subject for intensive investigation. We approached the subject with a vast ignorance but an open mind, appreciating the arguments for and against the dietary theory of Goldberger. Indeed our first investigations were along the line of infection. Jobling and Peterson some years before found a fungus or mold in the stools of patients with pellagra which produced in cultures a fluorescent substance. When an extract from the cultures was injected into white mice, and the mice exposed to sunlight, red inflammatory lesions appeared on the ears analagous to the skin lesions of pellagra. According to their theory this photo-sensitizing substance was absorbed from the intestines of the pellagrin and this accounted for the susceptibility to sunlight which is such a characteristic feature of pellagra. Dr. Terry Wood, then a medical student at the Duke Medical School, attempted to duplicate Jobling and Peterson's cultural studies. He did find a fungus in the stools of pellagrins which produced in cultures a fluorescent compound, but a large series of control cultures on normal, healthy doctors, nurses, and medical students showed the presence of the same organism.

Not finding any convincing evidence that pellagra was an infectious disease, we turned to a study of the patient's diet. It was soon obvious that the pellagra patients were eating essentially the same type of diet which Goldberger used to produce pellagra in convicts. We next prepared a standard basic diet that was adequate in calories, fats, carbohydrates, protein, minerals and all the vitamins except Goldberger's pellagra preventive factor. Upon this diet dogs regularly developed blacktongue. A preliminary report of our studies with this diet was made before this Association in Raleigh in 1933.

This basic diet was fed to 107 pellagra patients, all of whom had the characteristic skin rash on the exposed parts of the body, and one or more constitutional symptoms of the disease. There was a prompt improvement in the skin lesion in nearly every case. In some instances the constitutional symptom improved, while in others they remained stationary or advanced. The disappearance of the skin lesions cannot be used as an index of recovery because a patient's skin may heal promptly while the disease progresses to death in defiance of all known treatment. We devised a method of graded exposure to sunlight, varying day by day from 15 minutes up to a maximum of one or two hours, to determine whether the improvement was genuine or whether they would again relapse when exposed to direct rays of the sun. Thirty-five patients subsisting on the standard basic diet while in the hospital, where they were protected from sunlight, were exposed to graded doses of sunlight on one hand and forearm and in some instances the corresponding foot. Members of the staff and patients with other diseases were used as controls and in no instance was the exposure severe

enough to produce a sunburn. A dermatitis appeared over the exposed areas in thirteen of the thirty-five patients. Two patients, in whom no dermatitis was observed, developed constitutional symptoms. No accentuation of the clinical manifestation of pellagra was noted in the remaining 20 patients who did not develop skin lesions.

The dermatitis which appeared in thirteen of these cases varied from an erythema with vesiculation to heavy crusted, indurated lesions, and was indistinguishable from the skin lesions of spontaneous pellagra. In eleven instances the lesions were produced on a previously involved area. In eight patients, however, the dermatitis was produced on apparently normal skin which had previously been protected by clothing.

The tongue became definitely red and sore in twelve of the fifteen patients. Diarrhea was precipitated in ten, nausea in seven, vomiting in six, anorexia in eight, and dementia in four. All fifteen patients developed one or more severe constitutional symptoms after exposure to direct sunlight. Neither skin lesions nor general symptoms occurred in any of the eleven patients who were re-exposed to maximum doses of sunlight following adequate treatment, that is to say, following the addition of the pellagra-preventive factor of Goldberger.

In taking routine histories of patients with pellagra, the majority, when specifically questioned, recalled a prolonged exposure to sunlight shortly before the development of the dermatitis. It was also noted that the occurrence of dermatitis was almost always followed by constitutional symptoms of varying intensity. In 130 consecutive cases sore mouth and tongue was noted in only 17 before the appearance of the dermatitis and in 93 coincident with or after the dermatitis. Diarrhea was present in 12 before and 66 after, abdominal pain in 5 before and 16 after, nausea and vomiting in 6 before and 25 after, anorexia in 6 before and 37 after, nervousness in 6 before and 32 after, and paraesthesias in 2 before and 17 after. Ataxia and dementia was not present in any of the 130 cases before the dermatitis but ataxia developed in 8, and dementia in 17 after they had exposed themselves to the sun and developed a dermatitis. It would seem, therefore, that in most cases of pellagra symptoms of severe intoxication result from a toxin, which is produced in the skin by the action of sunlight. The patient presents the picture of an acute infection, and yet it is not an infection, because the symptoms are promptly relieved by adequate dietary treatment in most instances, and when the missing food factors are supplied the patient is no longer susceptible to sunlight. No one would deny that infections may play an important secondary role in both the initiation and termination of the disease. It is obvious that a patient with a chronic infection of any kind may have the appetite reduced and the assimilation of food disturbed to such a degree that pellagra will develop. Furthermore a terminal infection with broncho-pneumonia, ulcerative colitis or septicemia may be the immediate cause of death. This should not disturb our faith in the dietary etiology of pellagra, since it is well known that the

immediate cause of death in both scurvy and beri beri is usually an infection.

In the group of 107 patients who were fed our basic diet 30 made a satisfactory recovery. The remaining 77 were either growing worse or had their symptoms reactivated by exposure to graded doses of sunlight. The criteria of a successful therapeutic remission are (1) prompt disappearance of all symptoms, (2) marked increase in appetite, and (3) failure of maximum doses of sunlight to reactivate the disease.

Rapid and complete recovery was noted in 20 of 22 patients receiving 90 cc. daily of an aqueous extract "solution liver extract—Valentine (N. N. R.)."

Twenty-three patients were treated by intramuscular injections of various liver extracts potent for pernicious anemia. Total doses derived from 400 to 6,750 grams of liver gave prompt improvement in the mouth and tongue symptoms but in striking contrast to whole liver therapy, there was no improvement in appetite, no constant effect on the diarrhea and in most instances relapse occurred after exposure to sunlight.

One patient was given orally each day the parenteral extract derived from 700 grams of liver without improvement.

The liver residue discarded in the process of manufacturing the parenteral extract was ineffective in 5 patients who received a total dose derived from 7,680 to 9,600 grams of liver. A dose derived from 28,800 grams was effective in one case of pellagra, but this same massive dose was also effective in three cases of pernicious anemia and one of sprue.

The combination of the partially effective dose of the parenteral extract (derived from 700 grams) and the ineffective dose of residue (derived from 9,600 grams) produced an immediate and dramatic remission in four cases of pellagra.

Blacktongue, which is the canine analogue of pellagra, was produced in dogs by feeding a modification of Goldberger's blacktongue producing diet No. 123. The treatment was limited to a ten day period. The criteria for a good therapeutic result were: (1) cure of the mouth lesion, (2) restoration of the appetite, (3) a prompt gain in weight which must continue for ten days after the treatment is stopped.

Valentine's liver extract was effective in three dogs receiving a total dose derived from 3,370 grams of liver.

In five dogs parenteral injection of pernicious anemia liver extract derived from 300 grams of liver improved the mouth temporarily but had no other effect.

Five dogs received 3,000 grams of the parenteral liver with marked improvement in the mouth symptoms, but unsatisfactory weight gain and a relapse of blacktongue after 22 days.

Eleven dogs received the residue derived from 1,000 grams of liver without improvement. One dog made a slow improvement after receiving

the residue derived from 2,000 grams and 3 dogs made a satisfactory recovery when the dose was raised to 3,000 grams. Even better results were obtained in 14 dogs when the 3,000 gram dose was supplemented with 300 of the parenteral.

When the ineffective dose of parenteral extract (derived from 300 grams) was given with the ineffective dose of the residue (derived from 1,000 grams) to four dogs dramatic improvement resulted which differed from our best results only in the shorter length of time which intervened before the next attack of blacktongue.

From these observations it would seem that there are two factors in liver which are necessary for the successful treatment of pellagra in man and experimental blacktongue in dogs.

Patients may be treated successfully in their homes by feeding them Valentine's liver extract in 30 cc. doses three times a day. The Valentine's oral extract contains both of the essential factors. They may also be treated by giving Lederle's, Lilly's, or Parke-Davis's parenteral extract in daily doses derived from 100 grams of liver, provided red meat, liver, milk, eggs, etc., are given in abundance by mouth to supply the second factor which is not present in the parenteral extract.

Patients with nausea and vomiting and diarrhea should receive, as Spies suggested, frequent intravenous injections of glucose and physiological saline to restore salts, fluid, and to prevent acidosis while the liver therapy is beginning to take effect.

We are working at present on a parenteral extract derived from the liver residue so this can be combined with the pernicious anemia parenteral extract to make a complete treatment for the pellagrin who is so ill that he cannot retain food by mouth.

CONCLUSIONS

1. Pellagra is basically a dietary deficiency.

2. The acute constitutional symptoms, which resemble those of an infection, are due in most instances to an unknown toxic substance produced in the skin by the action of direct sunlight.

3. Pellagrins and potential pellagrins should be protected from sunlight until they have had proper dietary treatment.

4. The parenteral liver extracts used for the treatment of pernicious anemia will improve the mouth and tongue of the patient with pellagra, or the dog with experimental blacktongue, but has no effect on the appetite or other symptoms.

5. Valentine's oral liver extract is an effective treatment for pellagra.

6. The liver residue discarded in the preparation of the parenteral liver extracts is ineffective in both patients and dogs in small doses.

7. The combination of parenteral liver extracts and the residue is as effective as the Valentine's liver preparation.

CHAIRMAN MITCHELL: You have heard Dr. Smith's paper. We will have discussion on the paper opened by Dr. Ruffin.

. . . The Chairman was advised that Dr. Ruffin was not present. . .

CHAIRMAN MITCHELL: If Dr. Ruffin is not here, the paper is open for general discussion.

DR. F. R. TAYLOR (High Point): I have been very much interested in the subject of pellagra for a number of years and I want to pay my personal tribute to Dr. Smith for the work that he has been doing. It looks to me as if he is on the eve of a epoch-making discovery, by getting something which I hope will be of real benefit to these very severe cases who cannot take anything by mouth and keep it.

We have been almost helpless in those cases before this, although a few men have reported, even in cases of that sort, good results from arsenic. I don't think that this is any argument for the infectious theory of pellagra, which I thoroughly believe in, and I will present my arguments shortly, because arsenic could conceivably clear up a coincident Vincent's infection, make the mouth better and enable the patient to eat, and then he gets his dietary principles and gets over the pellagra.

I don't think that there is any question at all in the mind of any student of pellagra that it is one of the diseases in which photo-sensitization plays a major part. It is by no means the only disease. There is a very interesting, rare disease, porphyria, in which all sorts of queer things, including pink teeth, have been reported. That is an extraordinary photosensitive condition. The patient is almost completely ruined by exposure to sunlight. The sunburn to the skin is terrific—worse than in albinos. But let us grant the effect of sunlight. I think we all admit it. Tom Spies showed that long ago in Cleveland.

DR. SMITH: I beg pardon. He denied it.

DR. TAYLOR: If I am not mistaken, I thought Tom put them in and got them well on the Goldberger diet, and got them worse in the sunlight.

DR. SMITH: He says the North Carolina sun wasn't like the Cleveland sun. They got worse.

DR. TAYLOR: I may be wrong. I will stand corrected. But anyway, here is the point that I want to make: *that this good old sun of ours did not start functioning in the year 1907.* That is absolutely inescapable.

I have an exceptionally high regard for Dr. Smith and I know that he will know that anything that I say is not in the nature of a personal attack on him. Far be it from me. I think he is one of the greatest additions that the medical profession in North Carolina has had in many a long day. But I wonder if in investigating some phases of this problem and in proving certain things which are true and which are signfiicant, some of us may not have done the ostrich trick of burying our heads in the sand with regard to certain other phases of the condition which are equally true and equally a matter of demonstrated fact.

Dr. Smith has stated correctly that between 1905 and 1915—and I will pin it down more definitely than that, the one year, 1907—pellagra appeared as a major problem in the United States. There was an outbreak in a negro insane hospital in Alabama. There were 88 cases with 57 deaths, and it was *acute* pellagra, fatal within a few weeks, a disease we do not ordinarily see today. It spread like wild-fire all over the South. It did *not* spread all over the North. In the winter time, with the appearance of the first frost, in those parts of the South that have frost, the symptoms largely disappear. Except in those cases where you have nervous and mental phenomena due to an actual obstruction of nerve tissue—and there you don't expect improvement—and they reappear the next spring.

The epidemiology of pellagra is extraordinarily interesting in recent years since it became a great problem in 1907 and the years following from 1907 to 1912, when it spread most rapidly. But in 1923, in these recent years, pellagra reached its low-water mark with regard to deaths. We had 224 deaths from it that year in North Carolina. Then from 1923 to 1931 the number of deaths from pellagra in the State of North Carolina increased about two and a half times as fast as the population.

Now I am going to say something that hurts my theory too. During this time, of course, we had built up our school system and we had domestic science, home economics classes in our schools. Women's clubs were developing home economics and our people had money to buy food with that they never had before. It was the era of prosperity. And on up to 1931 pellagra increased. 1931 wasn't exactly prosperity, but in 1932, I should say, the depression began to really pinch hard and a lot of people didn't know where they were going to get their next meal, and the axe came along and chopped down those deaths from 1,031 in 1931 to six hundred and some in 1932 and four hundred and some in 1933. I have no figures since then. I got those from Dr. Cooper of the State Board of Health.

That is pretty hard to explain unless there were climatic conditions unfavorable to the germ. But I wrote these things to Dr. David Riesman, whom I revere as the greatest clinical teacher of medicine under whom I ever studied, and Dr. Riesman wrote back that he thought my arguments were unanswerable as to the infectious origin of pellagra.

I was very much interested in a statement which Dr. James McLester of Birmingham, I believe it was, a former president of the American Medical Association, made, that because pellagra wasn't thoroughly understood as yet, that there must be some factor in addition to diet. Diet is an important factor. We can't dodge that issue. But I state that if you give me a bunch of convicts of the proper age and let me put them on *general* malnutrition rather than *special* malnutrition, I will develop tuberculosis in those convicts—not all of them, but in a certain percentage of them. I will produce tuberculosis that way.

What does that prove? It proves that diet is a mighty factor in tuberculosis. It does not prove that tuberculosis is not an infection.

Now in his insane hospital in Alabama where Searcy reported these cases originally, this original outbreak, Goldberger and all his works have not shown that there was a radical change in the diet of that institution at that time. Furthermore, it swept all over the South. The South, even more then than now, was of a predominantly rural population. The dietary habits of a rural population do not change overnight. *Something happened in the year 1907.*

Now let us take a broader viewpoint of it, a world-wide viewpoint. Pellagra has been known in Italy for centuries. *Acute* pellagra is extraordinarily rare in Italy. Probably it was common way back in the fourteenth century, or something like that. I don't know. But they don't see it much today.

Pellagra became rife in Roumania during the World War. They had acute cases there. It has been in Egypt for a long time. The acute form is rare now, as I understand it. Pellagra is rare in China in certain districts where starvation is rife, and I think that the conclusion is unmistakable that there is some additional factor besides an avitaminosis.

Wheeler has proved a great heroism in himself by swallowing pellagrous feces in capsules, by transfusing himself with blood from a patient dying with pellagra, etc. He has failed to produce it in himself. What more has he proved? That pellagra is extremely difficult to transmit by such means—perhaps impossible. I submit he could have done the same with tuberculosis. He could have swallowed tuberculosis sputum in capsules and escaped getting the disease. He could have transfused himself with blood and not contracted the disease, and he would not have proved thereby that tuberculosis is not an infection.

I was interested in this particular type of skin eruption that Dr. Smith showed, I believe, in his second picture, that looked so much like acne. I have had patients with acne who said they could clear it up at will by taking yeast, and that is another phase of some interest.

Dr. Smith says Goldberger didn't produce typical pellagra. But even if he did, that doesn't disprove the infectious origin. The moment you say that it is purely dietary, the moment you say that, and admit that the sun has an effect, you have to show one of two things: either that the diet was different before 1907 or that the sun wasn't on the job. (Laughter)

Chairman Mitchell: Is there further discussion on Dr. Smith's paper?

Dr. Robert L. Felts (Durham): I would like to ask Dr. Smith a question. Do you think it is necessary to give these patients maintenance doses of liver after they have apparently become cured? When they are cured, they are cured, without the subsequent administration of liver?

Clinically, my observation of pernicious anemia is that if they need liver once, you probably have to keep them up to a maintenance dose thereafter. I would just like to know if you think that is necessary in pellagra?

CHAIRMAN MITCHELL: Is there any further discussion? If not, Dr. Smith will close.

DR. DAVID T. SMITH (Durham): I am glad Dr. Felts asked that question, because I would like to use that as a point in showing a certain fundamental difference between pellagra and pernicious anemia. You don't need to give any liver after the patient can eat red meat. In pernicious anemia cases, they have to keep on taking the liver, but in pellagra we should use the liver for sometime simply to start them up. When once they can eat a beef steak—they don't have to have beef steak; chuck steak, any red meat, will do the same thing—they will not get pellagra again unless they get back on the same bad diet.

That is why you get those cases, because they go back on the same diet as before. Fortunately, we don't have to maintain it.

Dr. Taylor has presented in most beautiful fashion the arguments for infection, and it is very difficult to answer all those questions. He is maintaining that it is primarily an infection, a condition brought about by diet. I maintain that we don't have any infection element in it whatever. There are some weak points in my theory. The only explanation I can offer him for the sudden outbreak of pellagra—and I would hesitate to limit it to 1907, because it takes doctors a few years to learn to recognize things, but certainly in that period it became very common—is that there is very definite evidence that a fundamental change occurred in the dietary habits of the people of the South in that period.

We are the debaters and you are the jury. I had an uncle who went broke as a result of that. He had a rolling mill over in South Carolina and there was enough wheat grown around there to keep his rolling mill going for six months of the year. The other six months he ginned cotton and sawed lumber. In 1905 that mill ran for six months of the year on home ground wheat, and home ground wheat left most of the germs in it. It has been shown by Goldberger that you can prevent pellagra with wheat germs and kill black tongue in dogs with wheat germs.

By 1914 he was broke and had to close his mill, so that between 1905 and 1914 in that particular district a fundamental change did occur in the diet habits of the farmers, because they found out they could get a good price for cotton. They planted all their crop in cotton and instead of raising their own pigs and chickens they bought fat meat from the West and wheat flour from the West. That is what they did, and it is impressed on me because he went broke. So there was a change. That is the best I can explain to him.

I would like to make a nice little suggestion about frost, though, because I remember on the farm we always killed hogs when frost came. So we got red meat when it frosted. There is a fact which you must face.

There is one explanation, that frost killed the germs, and my explanation is that frost resulted in the hog being killed.

DR. TAYLOR: Where they don't have frost, do they have hogs there?

DR. SMITH: Pellagra doesn't show the sharp seasonal range where they don't have frost. That fits both our theories. We can argue indefinitely about this matter without coming to any conclusion.

I appreciate Dr. Taylor's kind remarks. He made some kind remarks and then made some others that remind me of the mother who put the little six-year-old boy out to watch his two-year-old brother. Pretty soon she heard the baby yell like he was being killed and she ran and said, "Johnnie, what happened to the baby?"

"A nasty old fly lit on his bald head and I killed it with my shovel," he said. (Laughter and applause)

CHAIRMAN MITCHELL: The next paper is, "The Interpretation and Clinical Application of Electrocardiograms," by Dr. O. L. Sharp, of Greensboro.

While Dr. Sharp is getting ready to get his paper out here, if there is no opposition to it, your Chairman is going to ask the President for next year to see if the Section on Practice of Medicine for next year can't be placed so that it will not conflict with the Section on Pediatrics, and furthermore, he is going to ask if it is possible to put the Section on Practice of Medicine on Tuesday instead of keeping it over for the last day of the Sessions.

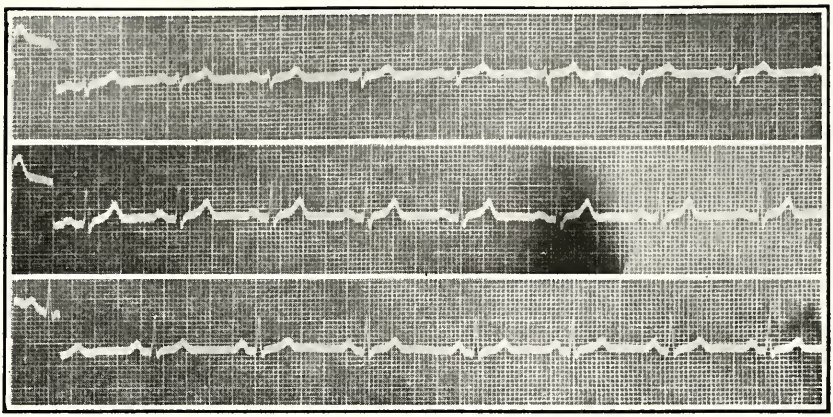
If there is any objection, I would like to hear it. (Applause)

DR. O. L. SHARP (Greensboro): Mr. Chairman, in presenting a paper of this description, I am reminded of a statement which was made by the late great Dr. DaCosta, in which he said he would like to make his address like the women's modern-day dress—long enough to cover everything, but short enough to be attractive. I hope that we may get a little information from this paper.

THE INTERPRETATION AND CLINICAL APPLICATION OF ELECTROCARDIOGRAMS

By OLIVER L. SHARP, M.D., Greensboro, N. C.

The increasing incidence of cardiac disease is quite well known to all of us and we see many of the victims passing out quite dramatically, dying from acute coronary occlusion and less commonly from congestive heart failure and angina pectoris. Statistics reveal that death from this cause ranks highest, having supplanted tuberculosis and cancer. These factors should serve, and I am sure they do, to impress upon us the great necessity for a better and more complete cardiac study. The proper approach to any thorough study, as it should be, depends on all the methods at our command and the use of the electrocardiogram is only a



Mrs. E. B. A., Age: 39, W. Fem., Mar.

C. C.: Pains in chest and abdomen.

Clin. Diag: Angina Pectoris.

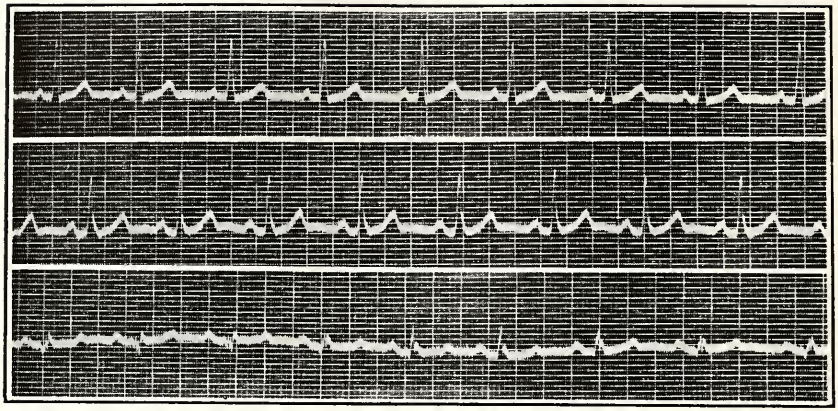
F. H.: Father died of heart disease. One brother died at age of 34 with angina. Otherwise negative.

P. H.: Most of usual diseases of childhood. Appendectomy in 1929. Has had some gastric discomfort over a period of several years and was given thyroid in 1933 because metabolic rate was low.

Pres. Ill.: Dates back 6 years during which time she has had a good deal of indigestion and precordial distress, particularly for a year. Seen by me in late June '36, with typical attack of angina. Had 2-3 such attacks in a month. Electrocardiogram was for all purposes negative and did not reveal any abnormal changes. X-ray of gall bladder showed stone and with removal of gall bladder she has been free of further trouble.

Final Diagnosis: Cholelithiasis.

part of such a procedure. It seems to be the consensus of opinion among the leading cardiologists, notably Paul White of Boston, that no heart examination in its finer analysis is complete without an electrocardiogram, but mind you a good history is as important now as ever. The same holds true for the cardinal features of physical diagnosis, namely, inspection, palpation, percussion, and auscultation. The use of the x-ray and fluoroscope must be considered of the utmost value. I am prefacing my remarks along this line to emphasize how necessary it seems to me that we attempt to evaluate our findings of all the known methods and not allow undue enthusiasm for any one approach to cardiac conditions to blind us in arriving at a definite conclusion because all of us are perfectly aware that the most exhaustive examinations sometimes prove woefully inadequate and leave us helpless in making a satisfactory diagnosis. We must not forget that in the case of the electrocardiogram we may have normal findings in the presence of organic and sometimes serious heart conditions. It is quite apparent, therefore, that a diagnosis must not rest on graphic evidence alone.



Mr. B. McN., Age: 47, W. M.

C. C.: Pain in left chest.

M. H.: Unimportant.

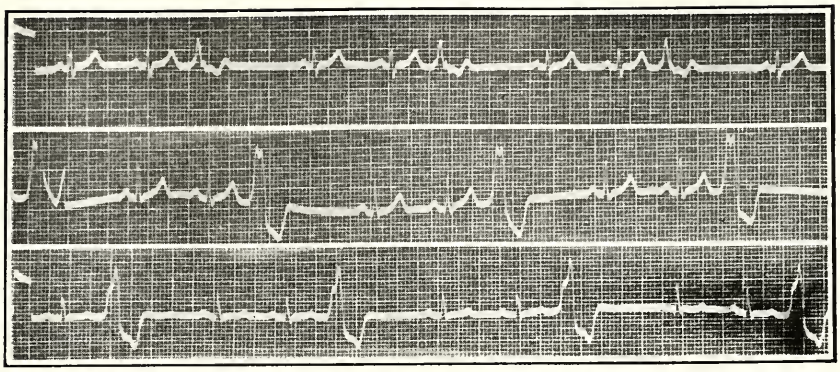
P. H.: Has had 2-3 attacks of kidney colic. No trouble in recent months. Some indigestion especially flatulence. Smokes 30-40 cigarettes a day.

Pres. Ill.: Dates back 2 years when he noticed a good deal of pain in precordium which required morphine for relief. Has been advised that he had angina pectoris or neuralgia of heart.

Electrocardiogram reveals nothing of import and with sedation and discontinuance of smoking he has been relatively free of trouble.

Electrocardiography was used almost entirely, at first, for the study of disturbance in rate and rhythm such as arrhythmia, tachycardia, and bradycardia but we now know the interpretation of heart tracings can, and does, give valuable information in diagnosis by analysis of the shape, amplitude, and time relations of the individual waves or deflections. With no thought of being too academic and with due apologies to those of you who are already familiar with electrocardiographic procedure it occurred to me that it would be advisable that some thought should be given to the description of the components of a normal tracing and to describe their relationship to the events which occur during a cardiac cycle. In this manner I believe the subject can be made clearer. Accordingly, therefore, the enlarged reproduction of a normal tracing in lead 2 is shown herewith. We note that this reveals five waves or deflections all of which are located above the iso-electric or base line, or nearly so and are upright in character and termed positive. Waves below this line are usually abnormal and are designated as inverted or negative waves. These five deflections are termed, in alphabetical order, P, Q, R, S, and T waves, but for our purpose and for the sake of clarity these are considered further as P, QRS, and T waves, or as the three main complexes.

The P wave marks the beginning of the excitation of the auricles or the initial stage of contraction. It is usually about 2 mm. high (2 small



Mr. H. W., Age: 31, W. Male.

C. C.: Skip in pulse rate.

Clin. Diag.: Sinus arrhythmia or extra-systole.

F. H.: Unimportant.

P. H.: Nothing of import except severe attack of tonsilitis in 1934 and same year all teeth removed because of abscesses. Smoked excessively.

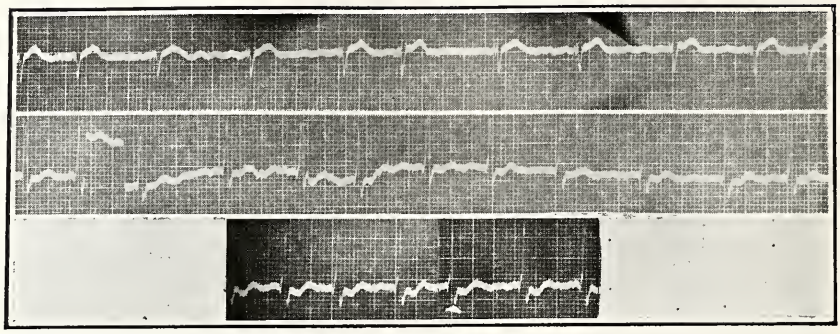
Pres. Ill.: In 1934 I examined him for insurance and found his irregularity. Nothing else noted.

Electrocardiogram reveals: Ventricular extra-systole. Cessation of smoking and sedation cleared up his condition.

squares above the iso-electric line) and its contour is rounded and smooth and its duration is about 0.08 of a second.

The PR interval, from the beginning of the P to the beginning of the QRS, represents the spread of the excitation wave from the sino-auricular node of Keith and Flack through the musculature of the auricles to the node of Tawara and thence to the Bundle of His to the point where the bundle divides into right and left branches, the duration of which is .11 to .21 of a second, prolongation beyond that period indicates auriculo-ventricular block which occurs in three grades. The QRS group sometimes referred to as the R complex represents the onset of the excitation process entering the ventricles or the initial ventricular deflection. This portion of the electrocardiogram really is that part of which occurs in the conduction or "wiring system."

The four, Q, R, S, and T, waves occurring in the complete ventricular systole, are called the ventricular complex. Duration of the QRS deflection varies from .04 to .10 of a second, never more and usually less. It is represented, you see, by a sudden tall peak or spike and smooth and even in contour. In practically 75% of people past the fourth decade of life this complex will be negative or below the base line, commonly called left axis deviation, but if it appears in the tracings of young people, regardless of how slight, it is of importance.



Joseph C., Age: 13, W. M.

C. C.: Shortness of breath and palpatation of heart.

Clin. Diag.: Chronic valvular disease and cardiac hypertrophy.

F. H.: Unimportant.

P. H.: Most of usual diseases of childhood and heart trouble over a period of several years. Severe attack of tonsillitis with joint involvement 5 years ago.

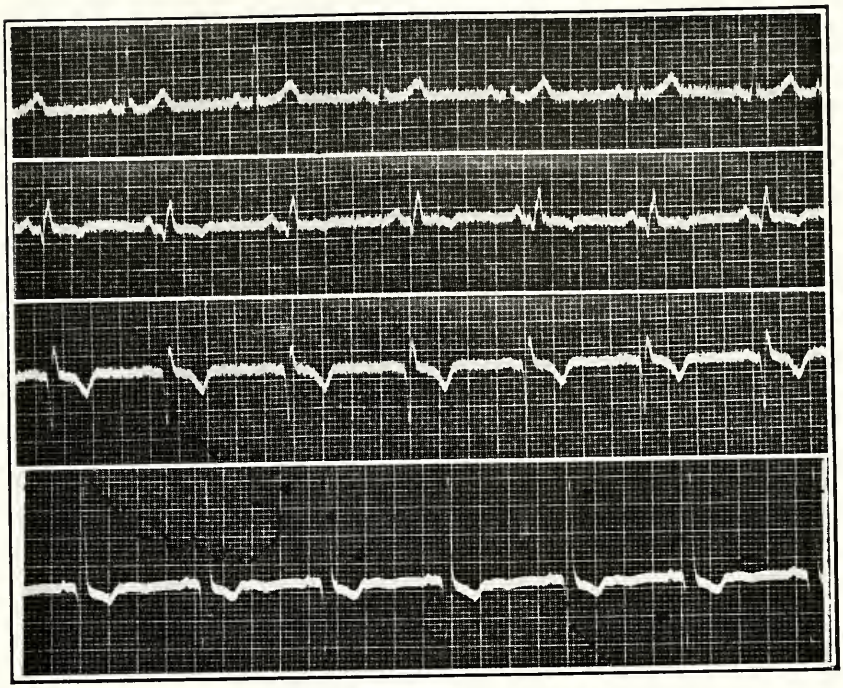
Pres. Ill.: Following repeated attacks of tonsilitis and the joint trouble patient has been troubled with shortness of breath and palpatation. On exam. a very irregular pulse noted, loud mitral murmur and enlarged heart.

Electrocardiogram reveals: (1) Auricular fibrillation, (2) T changes probably due to large doses of digitalis, (3) Right axis deviation.

The T wave represents the final phase of the ventricular contraction or the completed activation of the ventricles by the cardiac impulse. In the main it is a blunt, rounded, upright deflection varying in time from .10 to .25 of a second and usually 1 to 5 mm. high.

With these few elementary remarks having been made in attempting to describe for you the normal tracing it now seems proper to give you some of the more important changes noted in each deflection from the abnormal viewpoint.

We find that by counting the P and QRS waves in a graph we are able to tell if the auricles and ventricles are contracting at the same or at different rates. When we find that the P waves are replaced by irregular wavelets it signifies auricular fibrillation. Numerous such wavelets, quite difficult to count, signifies auricular flutter. This deflection is always above the iso-electric line in leads 1 and 2. In some cases it may normally be below the base line in lead 3. Any complex occurring both above and below the iso-electric line is termed diphasic. An increase in height of the P deflection when persistent signifies: (1) Mitral stenosis (there is some times notching here). (2) In congenital pulmonary stenosis (both conditions are associated with enlargement of the auricles). (3) Hypertension especially associated with myocardial failure. Diminution in height occurs in: (1) Hypothyroidism, (2) Digitalization and some times (3) Bradycardia. Inversion in lead 2 is always abnormal and occurs with auricular extra-systole whereas inversion in lead 3 is seen normally. The P wave is



Mr. H. C., Age: 42, W. M.

C. C.: Referred for cardiac study.

F. H.: Has no bearing on this case.

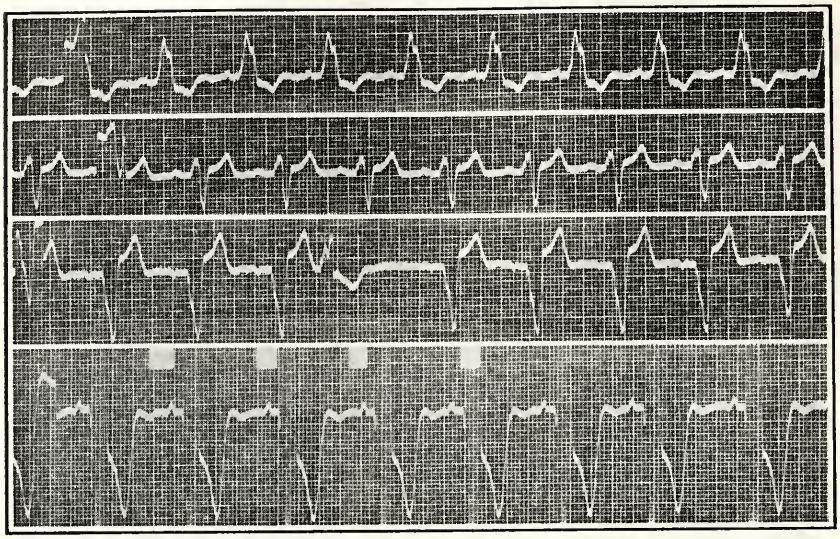
P. H.: Typhoid at age 16. Influenza in 1918 and 1930. Otherwise nothing of import.

Pres. Ill.: For several years has had some shortness of breath on exertion and precordial pain and discomfort, especially when worried or excited. Walking aggravated the condition. Some "gas pains." Had typical attack of coronary involvement in Feb. 1937.

Electrocardiogram reveals: (1) Myocardial degeneration, (2) Coronary artery disease with infraction probably recent as indicated by high take off of T in lead 3, (3) Left axis deviation.

inverted or diphasic in paroxysmal auricular tachycardia and is absent in auricular fibrillation and flutter, auriculo-ventricular and sino-auricular block.

In considering the QRS complexes we find that when the amplitude is below 5 mm. that this is designated as low voltage and usually is seen generally in: (1) myocardial disease, (2) small and weak hearts. When the conduction time is lengthened beyond .10 of a second it indicates myocardial damage of a sort and occurs in bundle branch block, and this condition is diagnosed by (1) widening of the QRS interval above .10 of a second, (2) notching and slurring of the complex, (3) a T wave opposite the main deflection in all 3 leads, and (4) T changes.



Mrs. B. W. R., Age: 57, W. Fem.

C. C.: Shortness of breath and pain in chest.

Clin. Diag.: Chronic myocardial degeneration and coronary artery disease.

F. H.: Relatively negative.

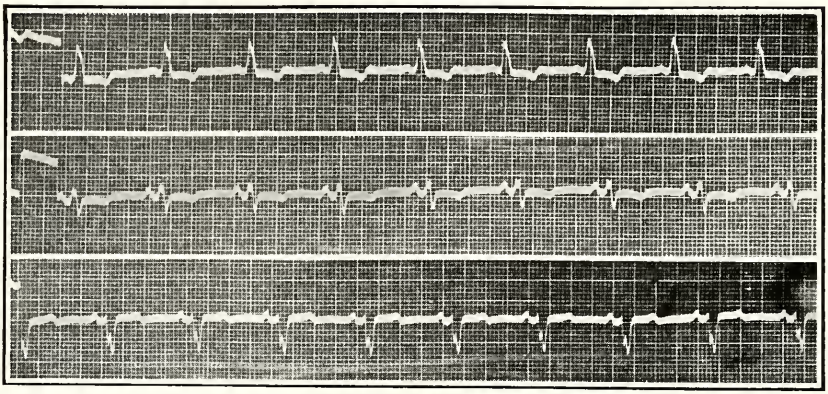
P. H.: For many years patient has had hypertension and pain in the anterior chest. Has been confined to bed for several months in past 8-10 years as a result of exhaustion and nervousness.

Pres. Ill.: Since Sept. 1936, has had marked dyspepsia and precordial pain that required much morphine to relieve her. The pain in the region of heart never absent during past 2-3 months.

Electrocardiogram shows: (1) Chronic myocardial involvement and coronary changes, (2) Left bundle branch block occasional, (3) Ventricular premature contraction, (4) Left axis deviation.

The consideration of the T waves or final ventricular deflection reveals that it may be flattened, inverted, iso-electric, or diphasic and this is of import as it is indicative as a rule of myocardial disease of a special kind, coronary thrombosis with cardiac infarction. However, there may be flattening and even inversion after certain medication, especially digitalis. It is a temporary condition in certain toxemias during convalescence from acute infectious diseases such as diphtheria, scarlatina, influenza, and pneumonia. Obviously it is nearly always permanent in coronary diseases. Inversion in lead 1 also occurs in prolonged hypertensive heart disease with blood pressure that remains at unusually high levels. We note changes too in aortic insufficiency of rheumatic origin, usually in young people due to an inadequate amount of blood reaching the myocardium.

The Q part of the QRS complex is usually absent or at the most it is but a short point projecting 1 or 2 mm. below the base line except in



Dr. A. R. W., Age: 76, W. M.

C. C.: Referred for cardiac study.

F. H.: Unimportant.

P. H.: Has always been active and has been engaged in practice for 54 years. Has known he had a "murmur" since 1892. There has been dyspepsia in part but slight precordial discomfort and swelling of feet and ankles.

Pres. Ill.: For one month has had some shortness of breath—oedema of feet and ankles.

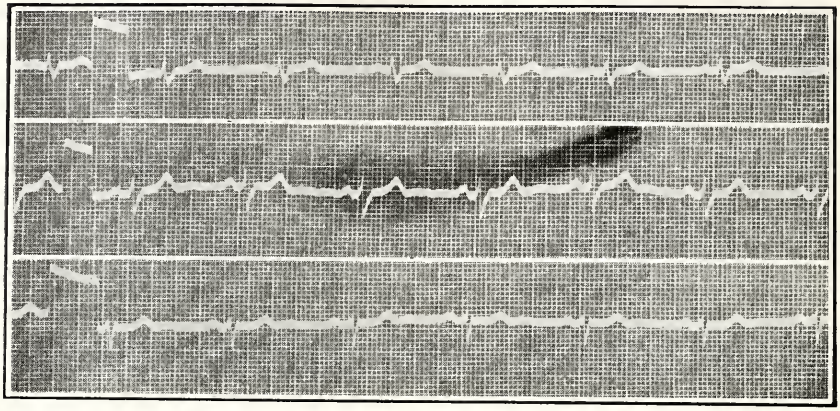
Electrocardiogram reveals: (1) Myocardial disease as shown by notching and slurring of QRS complex, (2) Coronary artery involvement as indicated by T changes a part of which may be due to digitalis effect, though his dosage has been small, (3) Left axis deviation.

infants and young children and for our purpose it may be disregarded. The S wave is ordinarily a slight sharp down stroke of 1 to 3 mm. immediately succeeding the R wave, in fact, continuous with it. Sometimes it is normally absent. Therefore, it seems needless and perhaps unwise to attempt much analysis of the separate components of the QRS complex for clinical purposes.

. . . Dr. Sharp made the following remarks, after presenting his paper. . .

I chose this subject because I felt that the medical profession was somewhat skeptical as to the value of electrocardiograms. What are you going to do about it after you have found out what is wrong with the man? You know a man has got it, what good does it do you? If a man has myocardial changes, that man should be in bed like the tubercular patient. I had the same impression before I attempted to learn something about electrocardiograms. The thought was, "What are we going to do after we find out what all this is about?" But I have changed my viewpoint. Obviously I should, and it would be rather poor business if I didn't.

I brought a few tracings along that I happened to have, and if you gentlemen will pardon me for a few minutes for prolonging this I would like to bring out some points of interest.



Mr. H. H. F., Age: 58, W. M.

C. C.: Comes for cardiac study.

Clin. Diag.: Myocardial involvement.

F. H.: Family history essentially negative except one brother died of heart disease.

P. H.: Important phase of past history has been his gastro-intestinal tract. Duodenal ulcer for 10 years and constipated all his life. Had appendectomy, hemorrhoidectomy, and fistula removed. For past 8-9 years has had periodic swelling (probably every 6-8 months) of feet, first one foot and then the other involved usually well demarcated at ankle. Comes on suddenly and leaves same way. This has given marked pain and redness.

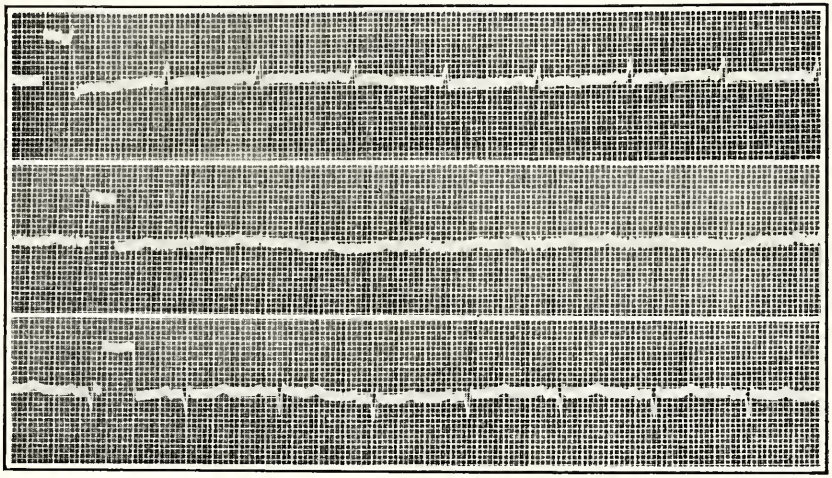
Pres. Ill.: Dates back 9 years. Had some shortness of breath after strenuous exercise. Has had hypotension (sys. below 100) for several years. Has noticed some faintness or weak feeling, especially marked when hungry. Finds taking food relieves condition.

Electrocardiogram reveals: Probable myocardial involvement (Small QRS complexes with some thickening). Left axis deviation.

. . . The room was too light and the tracings could not be used. They are included with the paper. . .

I have the records of two or three patients here that might be of interest. The first was a young woman, age 39, who had a brother who died of angina and whose father died of heart disease. She had been treated for everything from dandruff to ingrown toenails, I think, and a lot of study had been done on the gastrointestinal tract. No gall-bladder study had ever been made. I saw her last July in what I thought was a typical attack of angina, and I told her so. I saw her in two or three attacks, but I finally made an electrocardiogram, and that was negative as far as any changes were concerned.

Somebody will say, "How do you know that rules out angina?" Well, that doesn't absolutely rule it out, but without any evidence of coronary changes, without any evidence of any other changes in the electrocardiogram, I began to look elsewhere to find out what her trouble was, and I found two nice gallstones somebody had overlooked in days gone by. She



Mr. W. M. H., Age: 75, W. M.

C. C.: Comes for cardiac study.

Clin. Diag.: Chronic valvular disease and myocarditis.

F. H. No bearing on this case.

P. H. Aside from several attacks of hematuria that came from the bladder his past history has been negative.

Pres. Ill.: For some weeks has had some difficulty in sleeping lying on back. Has had a good deal of mucous in throat and some gastric discomfort.

Electriocardiogram reveals: Myocardial degeneration. (Very small QRS complexes in all three leads). Coronary involvement (shown by iso-electric T in all 3 leads). Left axis deviation. Fluroscopy reveals enlarged heart.

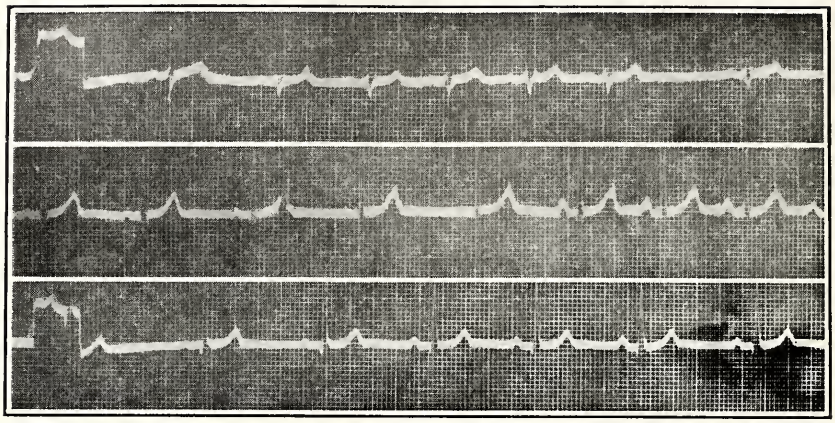
was operated on for appendicitis ten years ago and probably had the gallstones then.

That shows the value, in that one patient if nothing else, of electrocardiograms in arriving at a definite opinion as to what might be wrong with a patient. There is no reason why we couldn't have found both.

You say, suppose you found some changes in the electrocardiogram and you had the gall-bladder x-rayed and it showed the stones. What would you have done?

I would have taken the gall-bladder out and seen if she had any further symptoms as far as her heart was concerned.

The next one of the patients I had was a man 47 years of age at that time who had typical symptoms of coronary disease. He was told by one doctor that he had angina, and another told him he had neuralgia of the vagus nerve. Now whatever that is, I don't know. He wanted to find out what was wrong with him and we had an electrocardiogram made. I took him to Philadelphia to see Dr. McCrae and it was his opinion that the man had coronary spasm which was induced unquestionably by the large amount of cigarettes that he had smoked.



Mr. F. E.: Age: 28, W. M.

C. C.: Palpatation of heart and nervousness.

Clin. Diag.: Chronic valvular disease.

F. H.: No bearing on this patient.

P. H.: Most of usual diseases of childhood. Inflammatory rheumatism at age 12. Tonsillectomy shortly afterwards. Influenza in 1918. Frequent attacks of migraine associated with gastric disorder.

Pres. Ill.: Patient advised in 1924 he had a heart murmur. Found on examination for insurance. No appreciable dyspepsia except on marked exertion. Some precordial discomfort.

Electrocardiogram reveals: Some suggestion of right axis deviation, however, changes are probably within normal limits. Some irregularity due to sinue-arrhythmia.

I suppose somebody could take issue with that and say a man smoked thirty to forty cigarettes a day and he discontinued the cigarettes and got well of his trouble. I think that the proof of the pudding is in the eating, after all. We don't get very far with that kind of a proposition, but I think we do have tangible evidence that a large amount of cigarettes, or tobacco of any kind as far as that is concerned, goes give definite precordial discomfort, whether we call it angina or whether we call it something else. I know that I have experienced it, and I believe most men who smoke excessively find that is true.

Another patient that I had the tracing of here was a young fellow of 31 years of age who had extra-systoles.

You may say, "Well, couldn't you make the diagnosis of extra-systole without your electrocardiogram?" Perfectly, in most cases. But the thing that I was particularly interested in was whether or not he might have some other involvement. There was no myocardial changes. I took him off his cigarettes, gave him a little sedation, as bromide, and choral hydrate, and his pulse rate got perfectly all right. It probably could have been done without the electrocardiogram.

Another patient was a woman 57 years of age who had been sick over a period of a long time and had rather marked hypertension. I made an electrocardiogram and I found that she had all the things that I have described to you in connection with left bundle branch block. She had, of course, all the changes that occur in myocardial degeneration, the notching and slurring of the complex. The doctor who saw her before he saw the electrocardiogram said that she could get well, there was no reason why she couldn't get well. After he saw the electrocardiogram he changed his mind entirely because he saw the vast amount of damage that had been done over a period of time. Since that time, she, of course, died as a result of cardiac involvement.

I had another patient I was going to describe because what he was going through with seemed to be of particular interest. I saw him in consultation in Greensboro the other day. He had a history of having had a unilateral swelling of the feet at intervals of probably eight to ten months, and this extended over a period of something like ten years. It was well demarcated right at the ankle. When I saw the man the swelling was very definite. He had redness, he had pain, and the doctor who asked me to see him was interested in whether he might have some disturbance of his vascular system, particularly of his arteries. I made a study of his feet and ankles and did an oscillometric reading and found the arteries were perfectly patent. A diagnosis was made of epidermophytosis, and I think the man got up and got well. This had gone on for ten years. I am sure a lot of you have seen the same thing, but the reason I studied it was because we had the history of hypotension for a long period of time and we decided to do an electrocardiogram and see if he had any particular amount of myocardial involvement, which he did.

There was one other rather interesting thing about this patient. If we always had access to laboratory facilities we would probably get a lot of things done we do not get done. The man gave a typical history of hyperinsulinism, and he told me that at times at night he would awaken so weak he felt that he was going to faint, and he would almost have to crawl into the kitchen to get some food. As soon as he got the food he picked up immediately.

We have all experienced that, I suspect, in varying degrees. I have experienced it myself, but not to that extent. But that had been going on over a long period of time. In addition to clearing up his epidermophytosis, we put him on a high carbohydrate diet and frequent feedings, and the man is getting along perfectly all right.

Thank you very much. (Applause)

CHAIRMAN MITCHELL: The paper is open for discussion.

DR. FRANK B. MARSH (Salisbury): I understood Dr. Sharp to say that most often the waves following coronary thrombosis remained inverted. I believe, however, that very frequently, and, of course, depending very largely upon the size of the thrombosis and the extent to which the

myocardium is damaged, the waves do become upright again, and in the course of six months to twelve months the electrocardiogram may appear practically normal again. That is just one point.

And then, too, the Q wave, I think, is unquestionably in certain cases of myocardial failure, very much prolonged down below the iso-electric line, and that is of somewhat diagnostic value at present, prognostic value. I have one patient now under my care who has had recurrent attacks of pulmonary edema, with very definite myocardial failure, of course, and her electrocardiogram shows a very pronounced projection of the Q wave below the line in the third lead. It is very marked, and I believe that certain authorities believe that that is a significant thing.

Chairman Mitchell: Is there any further discussion of Dr. Sharp's paper? If there is no further discussion, I will ask Dr. Sharp to close.

Dr. Sharp: Mr. Chairman, in regard to Dr. Marsh's statement about Q waves, I think maybe I didn't make it clear that it is my thought that Q waves are important per se, but in order to avoid too much detail, I left it out. I think that he is right. I think we see definite evidence of a Q wave change.

Now in regard to changes. When they get back to a totally normal state, isn't it probably true that this has occurred in the so-called silent areas? I mean by that that probably some isolated spot in the myocardium has been affected in the beginning. I believe that White refers to that particular feature, and that is a thing that, if followed over a long period of time—which, of course, is a thing that I haven't had occasion to do—would indicate that there are plenty of people who have had definite evidence of coronary disease who are able to carry on five and ten years afterwards. Therefore, they must not have a great deal of change in their electrocardiogram, but those people have been probably affected more or less in the silent areas. That is the impression in my mind.

Chairman Mitchell: You all know the paper by Dr. Thomas was read in the General Session. I am going to take this opportunity to thank you all for your kind attention and your discussion of the papers. If there is nothing else to bring forward, we will adjourn.

. . . Whereupon, at five forty-five, the meeting adjourned. . .

SECTION ON PEDIATRICS

WEDNESDAY AFTERNOON, MAY 5, 1937

The Section on Pediatrics of the Medical Society of the State of North Carolina convened at two o'clock in the Blue Room of the Robert E. Lee Hotel, Winston-Salem, North Carolina, Dr. Arthur H. London, Jr., presiding.

CHAIRMAN LONDON: The Pediatric Section will please come to order. I will appoint as a committee to judge the best paper from this section for the Moore County Medical Society Award: Dr. Thomas Watson, of Greenville, Dr. Marion Y. Keith, of Greensboro, and Dr. J. A. Shaw, of Fayetteville. As the Nominating Committee for the chairman of this section for next year, I appoint: Dr. Albert Root, of Raleigh, Dr. Leroy Butler, of Winston-Salem, and Dr. Yates Faison, of Charlotte.

The program for this year will be a discussion of the newborn.

North Carolina ranks in the first ten in the United States in the number of deaths during the first year of life—69 deaths per thousand live births. More than sixty-six per cent of these are from conditions which arise in the newborn.

CAUSES OF DEATH

Chart—	*1931*	*1934*
Congenital Malformations	244	316
Congenital Debility	1329	728
Premature Birth	1380	1671
Injury at Birth	179	233
	3132	2948
Total Births	74,743	79,556
Total Deaths	5,459	6,200
% Deaths	7.30%	7.73%

You see the total deaths for 1931 were 5,459, and of these 3,132 were due to purely newborn conditions. You will also note that the death rate is about the same in 1934. The number diagnosed as dying from congenital debility, 1,329, is astounding. I am frank to say I am not sure just what is meant by this diagnosis. I dare say that probably a thousand of these 1,329 deaths were due to intracranial hemorrhage. Some probably were premature. It is encouraging to note that only 728 were so diagnosed in 1934 and that the number diagnosed as injury at birth increased slightly. We all know from statistics in larger clinics that the figures given here for injury at birth do not represent the number dying from this cause, as it is entirely too low. It is my hope that through the discussions today, we may help to decrease the infant mortality rate in this state, and to decrease the number of vague diagnoses, such as congenital debility.

The first paper on the program is that of Dr. Myers Hunter, "Cyanosis in the Newborn."

Dr. Hunter presented his prepared paper.

NOTE: (Chart)

CYANOSIS IN THE NEWBORN

By DR. MYERS HUNTER

In discussing cyanosis of the newborn one must include as well a discussion of asphyxia of the newborn. The term asphyxia is employed to describe that condition in which spontaneous respiration is not estabished with sufficient promptness and force to maintain life. When respiration is established asphyxia ceases, but cyanosis may continue for hours, weeks, months or years, depending upon the underlying cause. The placenta is the medium through which fetal respiration is carried on in utero, this organ carrying off the carbon dioxide. When the placental circulation is suddenly interrupted, the supply of oxygen is cut off and carbon dioxide accumulates in the blood. This, plus an increase of the hydrogen-ion concentration of the blood, in turn acts as a respiratory stimulus. Everybody is born with some degree of asphyxia. This is mainly due to uterine contraction causing interference with placental oxygen and carbon dioxide exchange. Pressure on the head causes a slowing down of fetal circulation, hence a decrease in oxygen content of tissues. Any factor which interferes with placental circulation will produce some degree of asphyxia.

The most important causes are:

(1) Prolonged second stage of labor
(2) Injudicious use of pituitrin
(3) Maternal convulsions
(4) Narcotization—morphine, nembutal
(5) Breech presentation
(6) Cord complications
(7) Premature placental separation

Cause, cerebralaemia and consequent failure of the respiratory center to function.

Cyanosis is a bluish discoloration of the skin and mucous membranes. Cyanosis develops when sufficient amount of oxygen unsaturation develops in the blood, or when the oxygen content of the blood is subtracted from the oxygen capacity carrying power of the hemoglobin.

An oxygen unsaturation above 6.5 volumes per cent is the threshold for the appearance of cyanosis.

Cyanosis divided into:

(a) Continuous
(Atelectasis)
(Heart Disease)

(b) Intermittent
(Cerebral Hemorrhage)

(c) Terminal
(Infections)

(d) Occasional
Prematurity
Vomiting
Feeding
Tetany

Causes of Cyanosis:

1. Those associated with delivery
   (a) Aspiration of foreign material
   (b) Prolonged and difficult labor
   (c) Early placental separation
   (d) Cord displacements
   (e) Narcotization
   (f) Toxic condition of mother
2. *Traumatic Conditions of Infant*
   (a) Cerebral edema
   (b) Cerebral hemorrhage
   (c) Injury to phrenic nerve
3. *Developmental Anomalies of Infant*
   (a) Congenital heart disease
   (b) Atelectasis
   (c) Enlarged thymus
   (d) Diaphragmatic hernia
   (e) Prematurity
4. *Infectious States of Infant*
   (a) Pneumonia and other respiratory
   (b) Sepsis
5. *Metabolic Disturbances,* such as tetany of the newborn.

Many times the cyanosis may be due to one, or several of the above. As, a cord abnormality may also have a congenital heart, or cerebral hemorrhage, is often associated with atelectasis. Prolonged labor, prolapsed cord, low implantation and early separation, and maternal convulsions cause cerebral anemia, resulting in failure of respiratory center to function. This interferes with proper exchange of gases and results in disturbed carbon dioxide relationship, causing cyanosis due to excess of carbon dioxide, or diminished oxygen, or decrease of both.

Narcotization, especially within four hours before delivery. Morphine 15%—no morphine 4%, caused delayed respiration.

In cerebral edema and hemorrhage—respiratory center is depressed, resulting in lack of carbon dioxide as stimulant. If hemorrhage is supratentorial the pressure is divided, if infratentorial the pressure is greater, resulting in greater cyanosis.

Hunt, in 118 autopsies on children who died before one month with definite cyanosis, found injury to brain more frequently than pulmonary or cardiac abnormalities. Frequently brain hemorrhage and atelectasis appear together. Only four of these cases showed severe atelectasis, and in each instance there was a massive cerebral hemorrhage. Phrenic nerve injury associated with brachial injury involving fourth and fifth cervical

nerves, causes interference with diaphragmatic action. Not all cases of congenital cardiac anomalies cause cyanosis. Atelectasis is given too much prominence as a cause. Two-thirds of a lung may be rendered useless, before cyanosis appears. It is present to some extent in all newborns and disappears with crying in four or five days, unless associated with some other cause. This must be distinguished from the undeveloped lung of the premature. Enlarged thymus as a cause is over-estimated. As a rule it has an associated hemorrhage or pneumonia, occasionally the mechanical pressure may produce cyanosis of face and neck, with sometimes pink bodies.

Diaphragmatic Hernia. Rare in prematurity and immaturity.

The respiratory center is undeveloped and does not respond to stimulation, therefore is more susceptible to sepsis and pneumonia. Tongue swallowing is due to short mandible and acts as mechanical obstruction. Respiratory infections prevent proper exchange of gases in the alveoli. Tetany causes metabolic disturbances which result in laryngospasm and bronchospasm, causing air hunger.

Diagnosis: Obstetrician's history is most reliable as to condition of mother. Character of delivery. Anesthesia, etc. Cerebral edema and hemorrhage the most difficult as cyanosis is intermittent. If cortical or infratentorial symptoms are severe. If intracranial pressure is increased may be slow pulse, convulsions, rigidity, bulging fontanel. Nystagmus, inability to swallow, refusal to nurse, continuous crying. Spinal puncture may help, but is susceptible to error as 10% of all newborns show red blood cells. Xanthochromic fluid may be caused by icterus. Crenated red cells a valuable aid, to distinguish from faulty technique. Phrenic nerve usually associated with brachial palsy. Lagging of chest on affected side.

Diaphragmatic Hernia. Usually on left side—physical signs are dullness, on one of examinations and tympany again may be heart displacement. X-ray with barium is helpful.

Pulmonary Atelectasis. Cyanosis is continuous. Difficult to diagnose unless extensive—x-ray is valuable. Pneumonia follows much more frequently than realized, usually the result of aspiration of amniotic sac contents.

Enlargement of Thymus. Much more rare than thought. Characterized by cyanosis, dyspnea, crowing sounds. Choking during feeding. X-ray and therapeutic response may clinch diagnosis.

Congenital Heart. Diagnosis comparatively simple if enlargement, thrills and murmurs present. May exist without clinical signs. In some cases not heard at birth but become evident days or weeks later. Again a murmur may be present at birth and disappear at a later date.

Tetany. Characterized by intermittent cyanosis. Laryngospasm, convulsions, carpopedal spasm, positive trousseau and chvostek.

CHAIRMAN LONDON: We will not have discussion after each one of these papers, but after the completion of the program, each paper will be open for discussion. We ask that when you do start your discussion that you direct your discussion at the man whose paper you want to discuss.

Next on the program we will have Dr. Sidbury whose paper is entitled "Intracranial Hemorrhage." Dr. Sidbury has to leave early so we will hear from him at this time.

. . . Dr. Sidbury presented his prepared paper. . . (Applause)

INTRACRANIAL HEMORRHAGE OF THE NEWBORN

By J. BUREN SIDBURY, Wilmington, N. C.

The Bureau of Vital Statistics advises us that each year some 120,000 babies are born dead or die within two weeks. Of this number approximately 50% die of intracranial hemorrhage or brain injury.

Ehrenfest of St. Louis states that "In at least 40% of autopsies properly performed on stillborn infants and those dying within the first few days of life intracranial traumatic lesions of some sort are found." Rodda states that from the statistics of the Newborn Clinic of the University of Minnesota, 50% of all infants that die intrapartum or during the first few days of life even after easy delivery, but frequently after breech and premature labor, die of intracranial hemorrhage. Bailey in a study of 100 autopsies at the Manhattan Hospital found intracranial hemorrhage in 40 cases. Vischer reports 74 intracranial hemorrhages and 51 tentorial tears in his series of 186 autopsies under one month of age.

In an effort to determine the frequency of intracranial hemorrhage at birth routine lumbar punctures were done on 500 consecutive newborn infants at City Hospital, Welfare Island, New York City, by Sharpe and his co-workers, and 10% of this number showed bloody spinal fluid. Contamination from needle puncture was not included in this series.

From these reports we must admit that intracranial birth trauma is a very common occurrence. Many cases there are who have intracranial hemorrhages which are never diagnosed or even suspected until later on in the first year when retardation symptoms, both mental and physical, are presented, as failure to hold head up or to sit up or to talk at the proper time.

ETIOLOGY

It is generally admitted that the greatest single factor in the production of intracranial injury is trauma. By this I do not mean to infer that poor obstetrics is the prime factor in its production. We know that poor obstetrics must be credited with its share, but all of us must admit that there are factors which are absolutely beyond the control of the obstetrician. Even in normal labor, precipitate labor, prolonged labor and in Caesarean section we find intracranial injury. Under the most favorable conditions we

know that the head of the baby must undergo tremendous pressure. It is often a difficult question to know when to apply forceps and when to stand by.

1. High forceps or poorly applied forceps are often responsible for this condition.

2. Pituitary extract when given too early must come in for its share.

3. Prematurity is certainly a most important factor in the production of the condition. The blood vessels in the head of the premature baby are more fragile than in the full term baby and are therefore not ready for the strain imposed by even a normal labor.

4. Syphilis is thought to play a part.

5. Hemorrhagic disease of the newborn is a definite etiologic factor but does not play a great part because of its infrequency.

6. Kuhn states that the incidence of intracranial hemorrhage is ten times as great with infants delivered surgically as against spontaneous delivery.

SYMPTOMS AND SIGNS

In general it may be said that any newborn infant who does not behave normally, that is, does not nurse well, cry vigorously when disturbed, breathe normally and have a pink, ruddy color should be suspected of an intracranial trauma. The following are symptoms to be looked for:

1. Failure to nurse properly, or inability to swallow.
2. Cyanosis, persistent or intermittent.
3. Apathy or unusual irritability.
4. Peculiar high pitched shrill cry or a constant grunt or feeble cry.
5. Projectile vomiting. Dehydration as result of too little fluid taken.
6. Convulsions, general or local, muscular twitchings.
7. Bulging fontanelle, may or may not be present, not infrequently not present.
8. Increased intracranial pressure, normal pressure 6-10. May be as high as 50 mm. hg.
9. Bloody spinal fluid usually present and a very important finding but is not always present even in a large hemorrhage. Increase in spinal pressure is usually present.

A lumbar puncture is not of great value in detecting blood after first week because the blood will probably be coagulated by that time and a clear fluid obtained, although increased pressure may be demonstrated.

These are the signs to be looked for in early infancy, in the first two weeks of life when early treatment may be of value. The late symptoms, those which occur at 6 to 12 months of age, are the result of intracranial brain damage. For these little or nothing can be done. In this class comes Little's disease, mental deficiency and idiocy. I do not wish to imply that all idiots, mental defectives or cerebral palsies are due to intracranial

injuries. All of us know that many of these are congenital developmental defects for which nothing can be done and to which we can contribute no definite cause.

PATHOLOGY

The lesion may vary from small punctate hemorrhages to massive hemorrhages any place in the cranium. The subdural, subarachnoid and intraventricular hemorrhages are the most common. The location may be supra or infratentorial or be located over the parietal lobes. The tentorium or the falx is not infrequently torn and a massive hemorrhage results from the rupture of one of the sinuses. In such cases a massive hemorrhage and rapid death follows. In case of rupture of the smaller veins a slow hemorrhage may occur and late symptoms result. That is, cyanosis and failure to nurse may be delayed two to four days. When a baby nurses well for a couple of days and then becomes drowsy, refuses to nurse, and shows any of the above symptoms, an intracranial hemorrhage should be strongly suspected.

Sharpe states that 12% of our 5,000 cases operated on by him showed increased intracranial pressure, optic nerve signs, a "wet brain" and scar tissue. He states that 80% of the cerebrospinal fluid is excreted through the walls of the supracortical veins. In these cases scar tissue obstructs these veins. Of the 5,000 cases operated by Sharpe, 79% were suspected as being abnormal after seven months.

TREATMENT

1. Lumbar puncture. In all cases of suspected intracranial hemorrhage a lumbar puncture should be done. It will relieve intracranial pressure whether from hemorrhage or edema and will be of therapeutic value in either case. It will assist in making a diagnosis. If bloody spinal fluid is obtained, it should be repeated every 12 to 24 hours until the spinal fluid is clear.

2. Spinal pressure determination should be done to record the intracranial pressure.

3. The patient should be kept quiet and fed with medicine dropper for a few days to avoid further bleeding. Spanking and flexing the baby is not advised.

4. The injection of 20 cc. of whole blood in the buttocks will decrease the coagulation time.

5. It has been advised that the baby's head be kept in an elevated position to decrease the tendency to bleed.

6. In cases which have large hemorrhages over hemispheres which may give focal signs the question of surgical removal of the clot should be considered.

There are some pediatricians who advocate doing nothing for these cases. They say that the damage has already occurred and nothing can be

done to remedy them. If we knew which of these cases were going to be spastic idiots or paralytics or epileptics, I think most of us would agree to this line of therapy. But since this can not be determined, and since many of us have seen a number of these cases saved, as we believe, from death, and oftentimes worse than death, that state of spastic idiocy, we cannot but feel that we should give these infants the advantage of lumbar punctures and blood injections which many of us feel are good therapeutic agents in these cases. I believe that we will help many more than we will harm by this procedure.

CHAIRMAN LONDON: The next paper on the program is that of Dr. Ravenel of Greensboro, entitled, "Infections in the Newborn."

ROUND-TABLE DISCUSSION OF THE NEWBORN

DR. S. F. RAVENEL (Greensboro): King Arthur and Knights of the Round Table: The only game I ever played at a round table was poker, but I presume you can bluff in this game as well as in that.

With reference to the discrepancy between the applause given the first speaker (Dr. Sidbury) and the second, may I say for Dr. Hunter's comfort that if all the audience was affected as I was, the reason they did not applaud was because they were so overcome by his eloquence as to be incapable of motion. (Laughter)

Infection in the newborn contributes a great deal both to infant morbidity and mortality. Possibly more may be done in this field to reduce morbidity and mortality than in any other discussed this afternoon. I think it may be said, almost axiomatically, that infants are born fairly sterile, and if they are kept in a relative state of sterility, they will largely escape infection—the exceptions of course being congenital syphilis and such things as smallpox, chickenpox, or malaria, from which the mother may be suffering at the time of delivery. Apparently newborn infants are resistant to some infections, notably gonorrhea. I think it is rather exceptional for female newborn infants to contract gonorrheal vaginitis, and we know that they are exposed to it very frequently. The other end of the baby seems to be somewhat more vulnerable to that particular infection.

Infection is brought to babies in about four different ways: by people, by food, by infected inanimate objects with which they come in contact, such as clothing, bedding, wash tubs and so on, and by infected animate objects, such as flies. With regard to people, physicians and nurses who look after newborn babies, may be as blamable in producing infections in them as are the enthusiastic and emotional relatives. The doctor who goes from a case of pneumonia, scarlet fever, or "flu," without washing his hands and stethoscope, to examine a newborn baby, quite possibly is just as guilty as is the nurse who looks after a newborn baby, although she has a bad cold, or is suffering from incipient flu—just as blamable as is the hospital which permits a nurse to go on duty in the nursery when she has a cold, whether she is masked or not.

It may be that hospitals in certain cities don't allow nurses who have colds to go on duty. That millenium hasn't arrived in Greensboro yet. When the work is heaviest, when respiratory infections are prevalent, that is the time when hospitals are short-handed and nurses with infections are prone to look after little babies.

The enthusiastic and emotional relatives, whether male or female, who must fondle the newborn baby probably account for a great deal of infection at home. I think it may well be said that the kiss of death is not only a mythological figure of speech, but probably is something which is very common in modern life.

So far as regional distribution is concerned, infections may be classified with reference to location as those affecting the skin and umbilical stump, the respiratory system, the gastro-intestinal tract, the urogenital system, the bloodstream, and the meninges.

The skin of course is very delicate, easily irritated, and when irritated, easily infected. The best method of caring for the skin of the newborn baby is a debatable subject: the proponents of mild soap and water baths, those who believe in olive oil, those who hold with some special antiseptic oil, or those who anoint with antiseptic ointments are perhaps all correct and get equally favorable results.

The main requisites of any care of the skin is that whatever is applied to it should be non-irritating and sterile. I don't think it matters whether one anoints the baby with Balm of Gilead or with Mennen's antiseptic oil, as long as Mr. Gilead and Mr. Mennen put out a sterile preparation which doesn't irritate the skin.

Whether the baby is in the nursery of a modern hospital or at home, the skin must be handled with respect and with care; that same care may be carried out at home provided the family has been instructed sufficiently carefully by the attending physician.

Statistics from various hospitals on the prevalence of skin infections may be misleading. I have heard the superintendent of a hospital aver that no case of skin infection had occurred in that nursery in the last year or two since a special kind of antiseptic oil was used. I happen to know of several cases of infection which did occur in that nursery. That may not be true everywhere but I doubt very much if published statistics in that respect are extremely accurate.

There are of course various types of skin infection: impetigo, pemphigus, furunculosis. The diagnosis of them is so obvious that it needn't be mentioned. As to treatment, different people use different things and get the same results: alpine light, various dyes which come in various colors, ammoniated mercury ointment. It doesn't seem to matter very much. Some pediatrists treat these infections, especially impetigo, with solutions of a mercurial antiseptic in collodion, thereby attempting to sterilize the lesion and isolate the infected area, which is an ingenious effort, and I am told by those who use it, extremely successful.

The most important thing in skin infection is prophylactic care—cleanliness of the nursery, cleanliness of the hands of everyone who touches the baby, and isolation—more important than any other. If the child shows a lesion, infinitesimal in size but suspicious, he should be immediately taken out of the nursery; one should not wait until he develops a full blown clase of impetigo and has infected the entire nursery.

Omphalitis, inflammation of the umbilical cord or stump, formerly a very common cause of neo-natal death, is now comparatively rare as a cause of death, but not uncommon as a portal of entry for infection. The prevention of this is sterility of the umbilical stump. In that regard, alcohol, which is commonly used on the dressing, may be a fine desiccating agent, as I am sure the gentlemen whose brains were desiccated last night at the President's Ball will agree today, but it is not a very efficient antiseptic agent.

So there should be not too much reliance placed on alcohol dressings for the cord. Cleanliness and sterility are important.

In the treatment of these infections conservatism is important: local heat, proper care of the baby, sulfanilamide, blood transfusion if the infection is serious. In that I may go counter to the advice of the eminent Dr. Wayne Babcock of Philadelphia who, in a recent publication, has announced, like Jove on Mount Olympus, that transfusion in babies with infection is not only of no value but dangerous. I don't agree with Dr. Babcock.

Erysipelas is a serious infection. It usually begins as omphalitis, but occasionally elsewhere in the skin. For treatment, various men recommend antitoxin, transfusion and sulfanilamide. Some people like alpine light and x-ray. My own feeling in regard to the latter two would be: to rely on alpine light to treat erysipelas in an infant would be like meeting the charge of a lion in Africa with a knitting needle.

Infection of the respiratory system is most serious and is the most common type of infection in newborn infants. They are peculiarly susceptible to respiratory infection. It is particularly prevalent in the asphyxiated and those with atelectasis, and those which as Dr. Sidbury said "have had a hard time getting here." Aspiration of infected material is an extremely common cause of respiratory infection, so that clearing material from the air passages is of tremendous importance. Coryza, otitis, bronchitis, pneumonia—it doesn't matter much what type they have, the results frequently are the same, if the baby is feeble enough and the infection sufficiently virulent.

With regard to otitis media, one always must remember that in newborn babies fever may be absent and no symptoms referable to the ears present at all. Symptoms often are referable only to the gastro-intestinal tract. It is my own feeling, as well as the feeling of everybody here, I am sure, that if a newborn infant has something wrong with him, unless an

examination of his eardrums has been made in a fashion which will give an adequate view of them, that child has not been properly examined.

As to the treatment of these infections, it doesn't matter much how you treat them so long as you don't do too much: adequate fluids in the case of serious infection, oxygen, transfusion, and so on. The main thing is to prevent aspiration at birth and to prevent infection from getting to them on the breath, on the hands, or on the clothing of those who come in contact with them.

Thrush, which formerly was the lot of almost every baby, now has become a "rara avis." In fact, some doctors think of thrush as something in the thicket instead of in the baby. The treatment of that is so simple as to go without mentioning. The infant's digestion is extremely delicate and easily upset. It is very easy to give a newborn baby diarrhea. They are extremely susceptible to infection, both to dysentery and to other types in the intestinal tract. There is no immunity against enteral infections at this age.

The most important thing in handling these babies is that if they don't have breast milk we must be careful not to overfeed them. I know that our strong, silent "man of the mountains," Frank Richardson, is able to make all his mothers nurse their babies; but in my part of the state, either the milk doesn't flow so freely, or something, so that we have to feed them artificially. The important thing is that we must not overfeed them.

Dr. Hendee Smith has been writing phillipics against overfeeding newborn babies, and I am not sure that a lot of what he says isn't justified. Babies will thrive on a small amuont of food for a couple of weeks, twenty or thirty calories per pound, or forty at the outside, and it is possible that we may overfeed them and produce an upset which may become serious.

So the first thing is not to overfeed them. The second thing is, if we are not able to have the mothers nurse them, we should feed them on food which is sterile. It doesn't matter whether that comes out of a can or out of a cow, so long as it is adequately sterilized. It probably doesn't matter whether it is sweet, sour or indifferent. The important thing is sterility. My own opinion in regard to the artificial feeding of a newborn baby is that sour milk is safer than sweet milk, for the reason that acid milk destroys organisms that may get into it.

Another important way of keeping babies free from gastro-intestinal infection is to exclude from contact with them adults or children who may be suffering from mild diarrhea; because forty per cent of the contacts of dysentery are carriers of dysentery bacilli, and a mild diarrhea in an adult may well be the source of fatal dysentery in an infant.

Another thing that one must remember is that many gastro-intestinal upsets in infants are simply an expression of infection elsewhere in the body.

Treatment is as follows: fluids orally or parenterally; dextrose if

needed; sour low fat, low carbohydrate milk; no drugs; if necessary, transfusion; and above all, isolation from the rest of the babies in the ward.

Infection of the urogenital tract is not uncommon in the newborn. Etiologically it is almost always secondary to infection in the skin or in the respiratory tract. Some authorities suggest that urogenital infection in the newborn may be initiated by concentration of urine and slowing of urinary flow in infants which are dehydrated.

Inanition fever may thus precede a serious urogenital infection. Recognition of that fact is not to be construed as suggesting that hapless infants be made edematous by stuffing them with various hydrating solutions, such as has been advocated in the literature, particularly by that prince of false prophets, I. Newton Kugelmass.

If urogenital infections are very persistent one must consider the possibility of a congenital anomaly of the urogenital tract and proceed accordingly. I myself have seen two children who have died as a result of infection arising from an incised paraphimosis. I assume that everyone here has long been familiar with the fact that paraphimosis may be reduced with amazing ease providing it is covered with a piece of cotton soaked in adrenalin for about five minutes, and that it is practically never necessary to incise one.

Treatment of urogenital infections in babies is usually simply water, alkalis, blood transfusion in severe cases, methenamine or mandelic acid rarely being indicated.

Sepsis is not as common as formerly, but is very serious. It is probably more common than we ordinarily think, originating usually in the skin or in the respiratory tract. The most important consideration in treatment is prevention. After it has gotten there, it is a pretty tough customer.

As to treatment, again I venture to differ with Dr. Babcock. I recommend blood transfusions and in infections caused by the hemolytic streptococcus, sulfanilamide, which must be administered with great care as to dosage and maintenance of alkaline reserve and bone marrow function.

Meningitis may supervene in the course of infections elsewhere. Occasionally, it is primary and then not infrequently due to the meningococcus. The symptoms in newborn babies are seldom classical. A bulging fontanel, rigidity of the neck, convulsions, may be totally absent, and the only symptoms may be gastro-intestinal disturbance and fever. It is necessary always in the presence of unexplained fever and gastro-intestinal symptoms in the newborn to think of infection of the meninges and to proceed accordingly.

In the therapy of meningitis one must remember that some cases recover spontaneously from pneumococcus and streptococcus infections and that one may be tempted to do heroic things which may be unnecessary or harmful.

In the treatment of meningoccus meningitis, anti-serum and antitoxin and our old friend, sulfanilamide, apparently offer a good deal of hope. Continuous spinal drainage has been advocated in cases of meningeal infection due to pneumococcic and streptococcic.

Congenital syphilis of course may not be obvious in the newborn baby. The Wassermann may be negative. X-ray changes often are present in the bones before the Wassermann is positive. If every pregnant woman had her blood tested two or three times during pregnancy, I dare say we would not see any congenital syphilis.

Malaria is now becoming more prevalent in many parts of the South. Congenital malaria apparently is not as rare as it is considered to be. I have been told by some of my colleagues in South Carolina that they frequently see malaria in newborn babies, and that fairly often the only symptoms may be a low grade fever, wasting, anemia.

Tetanus is now so rare that it is scarcely to be considered in a newborn baby, since they have been using clean scissors to cut the umbilical cord. The origin, of course, is usually infection in the umbilical stump. Treatment is ordinarily useless, but some cases do recover. I have seen one case recover that was treated with moderate doses of antitoxin, and with magnsium sulphate intramuscularly. To that may be added avertin rectally to control the convulsions.

Infants of undernourished, toxic, or eclamptic mothers, premature infants, and those born "after a hard time," are particularly prone to infection, and unusually good care is necessary to prevent their developing infections.

In summary, infants are born in a relatively sterile condition. If handled correctly, they remain so. Infection almost always is brought to them. Methods of prevention and treatment of these infections are debatable; diagnosis is usually obvious. (Applause)

Chairman London: The next paper is entitled "Prematurity," by Dr. Leroy J. Butler of Winston-Salem.

. . . Dr. Butler presented his prepared paper. . . (Applause)

PREMATURITY

By Leroy J. Butler, M.D., Winston-Salem, N. C.

I have been asked to present at this round-table discussion the subject of prematurity, which I am certain could be more intelligently discussed by many here today.

This is quite a timely subject and worthy of much study and discussion since, notwithstanding our increased knowledge of the subject, our mortality is still high. It constitutes a large part of the general problem of infant mortality in our practice today. At least half of the deaths occurring in the first year of life occur within the first month, and half of these deaths are due to prematurity, so you see this plays a big part.

In presenting this subject all children weighing 2500 gm. or less at birth are considered premature, or congenitally weak. The percentage of prematurities apparently varies in different sections of the country. Anywhere from 3 to 7% of births being reported prematures.

In order to arrive at any scientific approach in the reduction of mortality of infants we must try to analyze the cause of premature births, and to more intelligently treat this condition.

There are many causes of prematurity but the most common ones are multiple births, toxemias of pregnancy, syphilis, chronic diseases of the mother, such as heart or kidney disease and bleeding due to placental abnormality, such as placenta previa and premature separation of the placenta. Although multiple pregnancies are considered the most frequent cause of prematurity, the mortality rate is not so high in these cases, as the child is probably not as premature as the weight would indicate. Toxemias of pregnancy with proper prenatal care may prolong the pregnancy and increase the weight of the child. Syphilis even in our most enlightened communities still plays a large part in the causative factor of prematurity and naturally this could be reduced with proper treatment of this condition. The chronic disease and the bleeding from placental abnormalities will always play a part in prematurity.

THE CARE AND TREATMENT OF PREMATURE BABIES

We all know that the smaller the birth weight the higher the mortality. In former years an infant weighing three pounds or less had a very small chance of reaching maturity, but with the increased knowledge in the management and treatment of these cases the mortality rate has decreased, although quite high at present.

Swanson[1] presented the mortality rate in 752 infants born in Chicago Lying-In Hospital, the Department of Obstetrics and Gynecology, and the Department of Pediatrics of the University of Chicago. In this group he classified infants weighing 2800 gm. and less as premature.

Weight	babies	mortality
Under 100 gm.	31	100 %
1001-1500 gm.	51	7.06%
1501-2000 gm.	155	23.8%
2001-2500 gm.	418	6.0%
2500-2800 gm.	97	5.2%
	Total mortality	17.8%

Dr. Ethel Dunham[2] reported 244 cases of prematurity weighing 2500 gm. or less.

Weight	babies	mortality
1500 gm. or less	60	71.7%
1000 gm. or less	15	15 died
1001-1500 gm.	45	28 died
1501-2500	184	12.5%
1501-2000	78	17 died 21.8%
2001-2500	106	6 died 5.7%

In the care of premature infants I will mention a few of the important things to be borne in mind.

1—Maintenance of body heat; 2—Relieve cyanotic attacks; 3—Prevent infection; 4—Proper nourishment.

There is a variety of ways of maintaining body temperatures. An ideal way is to have an air-conditioned nursery so that certain temperature-humidity relationship may be maintained, but this is not accessible to most of us. The temperature may be maintained by warmed flannel wool or warmed cotton batting wrapped around the infant, the use of the electric light bulb in the crib or different types of incubators and other methods.

The most frequent complications during delivery is asphyxia, and the younger the premature infant the more frequent its incidence. The mucous should be removed by the use of a tracheal catheter, then oxygen should be given as long as cynosis is present. It may be advisable to administer oxygen for a few days at one to two hour intervals for a few minutes to forestall these cyanotic attacks. Pure oxygen or 95% oxygen with 5% carbon dioxide may be used.

Prevention of infection is very important in the care of these infants, as this plays a large part in the mortality rate. Special studies in which routine blood cultures are taken have shown a septicemia in a number of these infants ill with obscure conditions.

These infants should be isolated as nearly as possible, all visitors excluded from the room, and the handling of a premature baby during any procedure, such as feeding, taking temperature, bathing, changing diaper, etc., should be done with as little exposure as possible. The physician in examining the child should wear a gown and mask. And no nurse with coryza or sinus infection allowed near the baby.

The feeding problem changes from time to time in different sections and hospitals. Some advise the exclusive use of breast milk, others breast milk for a few days, then an evaporated or whole cow's milk formula. Others seem to think that results are practically as good with an artificial feeding from the beginning. The very small premature infant can take only a very limited amount of milk and it may be necessary to increase the caloric value of the milk. This may be accomplished by the addition of powdered milk to the formula.

We all know that in the feeding of the premature baby that quite often the child has a stationary period of weight. This is sometimes relieved by the giving of 10 to 20 cc.'s of whole blood intramuscularly, preferably in the infants' buttocks, which often starts the growth impulse. This was recommended by Blackfan years ago and apparently is worthy of trial in these conditions. Orange juice and cod liver oil are usually started at the end of the fourth week. Very often these infants are anemic and it is advisable to give some form of iron in the first two or three weeks.

The causes of death in premature babies are quite numerous. At least half of the causes of death are reported unknown, but we do know that prematurity alone, infection and intracranial hemorrhage play a big part.

Dr. Wilcox[3], reporting 330 premature infants, found that prematurity per se is the most common single cause of death, with injury at birth the next most common in those infants weighing less than 1500 gm. at birth; and infection the next most common in the infants weighing over 1500 gm. at birth. There were a greater number of girls than boys in his report with a slightly higher mortality rate among the boys.

There was a tendency towards a greater susceptibility to disease and towards a higher mortality rate in those prematures receiving little or no breast milk after the first ten days of life.

Grulee[4] in his report claims that 25 to 40% of deaths in the newborn may be attributed to intracranial hemorrhage and Clein[5] found in the group of premature infants studied by him the cause of death of 50% of those that died was cerebral hemorrhage.

Dr. Dunham[6] reported the cause of death in 66 prematures as follows:

Prematurity alone	34
Infection	16
Intracranial hemorrhage	11
Congenital defect	3
Others	2

She also made an effort to find out the effect on the onset of respiration in the infant when morphia was given the mother. 188 cases showed whether or not the mother had received morphia after admission to the hospital. On the 63 infants whose mothers had received one or more doses of morphia, 38% died, and of 125 infants whose mothers had no morphia only 23% died, in spite of the fact that among the infants who died, the proportion of infants of low birth rate was slightly greater among the infants of mothers who had no morphia.

When the mother had morphia the onset of respiration was delayed in 41%; when the mother had no morphia, only 16%. Although this is a relatively small number of cases to report it is worthy of note that giving of morphine to mothers in these cases may be detrimental to the infants.

I am sorry not to be able to present anything new in the prevention, care and treatment of these cases, but I feel that this subject is quite a challenge to the obstetricians and pediatricians and if we are to reduce this mortality rate we must give more careful and scientific study to this subject.

REFERENCES

(1) Swanson, Journal of Pediatrics, July 1936.
(2) Dr. Ethel Dunham, Journal of Ped., Dec. 1936.
(3) Dr. Wilcox, American Jour. of Dis. of Children, Oct. 1936.
(4) Dr. Grulee, American Jour. of Dis. of Children, Sept. 1936.
(5) Clein, American Jour. of Dis. of Children, 1929.
(6) Dr. Dunham, Journal of Pediatrics, Dec. 1936.

CHAIRMAN LONDON: The next paper will be presented by Dr. R. A. Ross of Durham: "Obstetrical Causes of Neo-natal Mortality."

. . . Dr. Ross presented his prepared paper. . . (Applause)

OBSTETRICAL CAUSES OF NEONATAL MORTALITY

By DR. R. A. ROSS, Durham, N. C.

As a rule the obstetrician's interests become so interwoven in the problems of his patient that he seldom, if ever, has an inclination, or takes the time to evaluate his responsibility. He usually has no thought other than that of a woman who is pregnant and the desire to see her to a satisfactory termination—which means a mother who bears little psychic or physical trauma and a healthy baby. It does not take long to learn that these two factors are interdependent. A mother who has something happen to her baby is a sick mother, and if the obstetrician were motivated only by selfish influences he would be most reluctant to see anything unforeseen happen to the infant. We know that our job may be complete when the baby is delivered but not our responsibility. We know that each delivery for weeks, months and years may be a boomerang to slap us in the face. A sudden death, a developing palsy or a backward child may actually or by implication be the reward of sleepless nights, skillful handling, thankless efforts and undue strain on the physician's arterial tree. It is no wonder that an obstetrician is most grateful when he claims as an associate and a colleague a pediatrician who unqualifiedly takes up and carries on. Who, when by some perversity he finds his own efforts unavailing will not by question or implication cause doubt to enter the minds of the parents in regard to the capability of the accoucheur; or who will mark an untruth with courage, a doubt with forthrightness, and misinformation honestly gained with an explanation. There is, no doubt, a great deal of ill feeling between doctor and patient and doctor and doctor, caused by the ill advised use of of the word "birth injury." It can imply a great deal that is wrong. To a distressed parent it may suggest willful harm or neglect. The zone between masterly in activity and hopeful procrastination is rarely well defined. One's intent can seldom be questioned. In certain instances an intracranial hemorrhage is no more associated with the technique of delivery than the development of hypertrophic pyloric stenosis is caused by faulty feeding.

The stillbirth and neonatal death rate are influenced by three factors. The mother, the fetus and its appendages, and the doctor. The first two are present during the entire term of pregnancy and according to some may have a carry over from previous generations. The obstetrician's influence should also spread over the entire gestational period, but this rarely happens. Usually it is only for a few months at short intervals with a most important session at the termination. Often it is most difficult to justly evaluate these causative factors just as it is difficult to designate the cause

of death in a premature infant born precipitately of a toxic mother. A practiced obstetrician also knows the vagaries of the consultant. A fellow obstetrician always thinks of puerperal sepsis if the mother is feverish and the pediatrician is apt to lead with the diagnosis of intracranial hemorrhage if the newborn is ailing. A conscientious obstetrician should assume the responsibility, but should seek to have this responsibility shared. Cognizant of the influencing factors, knowing the difficulty of exact diagnosis, and realizing the need of information all sources which offer enlightenment should be investigated and, naturally, these sources are apt to be as close as our own personal problems.

For the past few years there has been a very healthy attitude of inquiry into the incident, causation and analysis of stillbirths and neonatal deaths. There is a concentrated effort on the part of several organizations to correlate these various data. In order properly to interpret the information, it is necessary to have a recognized criteria. To furnish such a base line for the study of the neonatal mortality a survey was instituted at the Harvard Medical School. "A statistical study of the mortality at the Boston Lying-In Hospital from 1874-1934 has recently been completed and is submitted in the hope that it may provide a temporary standard, or a yardstick for similar studies in other communities." From this has come a series of seven studies, all of which are enlightening, pertinent and helpful. It seems that the thoughts provoked by Clifford[1] and his co-workers should activate every group to study their past records and to organize their current records in order that they might be even more informative. In the past 62 years, there were 120,726 babies delivered under the supervision of the Boston Lying-in Hospital with a stillbirth rate of 48. For the past 10 years the stillbirth rate is 62 with the higher rates in the years of 1929 through 1932. Bundesen and his co-workers (J. A. M. A., 107:270, July 25, 1936, and Hess Iden. 400, August 8, 1936) have instituted a similar program in Chicago. The beneficial effect was immediate and they are now undertaking a program of helpfulness to other institutions and communities.

The average neonatal mortality rate at the Boston Lying-In Hospital was 28.3 for 1,000 births. From 1872-1873 it was 79, and in 1933-1934 it was 19.5. The improvement in this institution is characteristic of most hospitals, and falls into two groups which may be classified as infections and probable infection in the premature infant group. However, it is the feeling of most individuals that the low level in these two groups has not been reached. Energy and effort must be expended, particularly in the premature group.

Intracranial hemorrhage, atelectasis, intrauterine asphyxia and asphyxia neonatorium hemorrhagic disease and congenital defects have remained fairly constant at about 10-15 per 1,000 births over a period of years, and present a most difficult problem to efforts at reduction.

In looking for the cause of stillbirths one encounters many conflicting

factors and many twilight zones. It is most difficult to say where one influence stops and another begins, or to say which factor is the more important. The only safe approach is to outline all the factors and to return to the old obstetrical homily of prevention.

Prematurity is undoubtedly a factor. Many investigators along many different lines are giving valuable information. By the help of the endocrinologists, sociologists, and nutritional experts the obstetrician may learn many things that will help him carry the patient to term.

In this state the question of late toxemia of pregnancy is paramount. Approximately one-third of the stillbirths have maternal toxemia as a background. Peckham has made many valuable studies into the ultimate fate of toxemic mothers and babies.

McCord has had a tremendous experience with syphilis as a complicating factor in pregnancy. Everything that he has written is well worth reading. He emphasizes the recognition and treatment of this condition as soon as the diagnosis is established. Coppolina (Am. J. Obst. and Gynec. 29:714, May, 1935) emphasizes constant and zealous treatment as a prophylaxis.

Bland (Del. State Med. J. 7:297, Jan. 1935) speaks of intracranial injury and justly emphasizes preventive measures, which may be summarized as follows: Scrupulous antenatal supervision with the view of recognizing and eliminating complicating conditions which may lead to serious difficulty at the time of labor; avoidance of undue intracranial stress from the imprudent use of oxytoxics; the use of elective abdominal delivery in complicated and threatening cases instead of difficult manual and instrumental delivery; routine use of Piper forceps in delivery of the after coming head in all difficult breech deliveries and in version and extraction operation, and avoidance in all cases of hasty antiquated manual means in extraction of the after coming head.

Asphyxia neonatum is a vague term but all obstetricians and pediatricians know all too well what is meant. Eastman (Int. Clinics, 2:274, June, 1936) gives a complete study of this condition, and again calls attention to the fact that prematurity, cerebral hemorrhage and asphyxia are so interrelated that it is almost impossible to establish precisely the importance of each. In this connection the influence of drugs administered to the mother undoubtedly plays a tremendous part; particularly the oxytoxic drugs, and in the opinion of some, quinine and most certainly morphine. Clifford studied 304 premature infants and found that the antepartum administration of morphine within one and one-half hours of the delivery was associated in every instance with the death of the infant. Anesthesia also affects the infant. We are not concerned at present with gross congenital abnormalities in the production of asphyxia, but, undoubtedly, inherent tissue weaknesses may be reflected in a lung that will not expand or a blood vessel that will leak or blood that is fragile. If we consider the treatment, we are apt to recognize the cause. The airways must be open,

the lungs must be insufflated, and the respiratory center must be stimulated, but here gentleness is the keynote of success. The lungs must not be unduly distended nor the respiratory center overly stimulated. DeLee has this to say regarding resuscitation equipment. "The tracheal catheter takes first rank. Without it even the most majestic machines are futile and with it they are hardly necessary." Henderson (J. A. M. A., 103:834, Sept. 1934) must agree with the logic of this statement.

D. P. Murphy has made many well ordered contributions on the question of congenital malformation. A definite percentage of stillborn infants are malformed or monsters, although the cause and cure are still problematic. He has opened most interesting avenues of approach to this distressing riddle. In this connection the possibility of harm to the fetus from Roentgen ray must be kept in mind. J. L. Miller and his committee have recommended that its use be restricted during pregnancy.

The question of an abnormally large child or postmaturity may present itself. This condition should be recognized and handled judiciously. T. Kaern (Acta. Obst. Et. Gyned. Scand., 16:189, 1936) gives the rate in this condition as 14.9 per cent against 3.2 for all newborns.

The various systemic diseases affecting the mother may offer perplexing problems. Often the child must be forgotten in the interest of the mother, but more often there is some satisfactory conclusion whereby the child may be saved. As an instance of this Randall and Rynearson (J. A. M. A., 107: 919, Sept. 19, 1936) outlined a most comprehensive routine for the delivery of diabetic mothers which definitely lowered the infant mortality which has remained unduly high in spite of the advance of diabetic therapy.

A. Holman and A. Mathieu (Am. J. Obst. and Gynec., 26:95, Jan. 1934) show that the blood sugar content of the newborn approximates that of the mother. It is also true of the r. p. h. of the blood.

S. L. Ellenberg (J. Lab. and Clin. Med. 19:944, June, 1934) and later Silger demonstrates that the normal sedimentation time in a newborn averages 15 hours as compared with two hours in an adult, the difference due to the fibrinogen content. The maternal blood shows 250-500 units of fibrinogen while the newborn infant's blood contains from 65-125 units.

Hirst (Am. Obst. and Gynec., 28:431, Sept. 1934) feels that the routine use of estrin would help prevent hemorrhagic diasthesis.

Kugelmass and Tritsch (Am. J. Obst. and Gynec., 28:259, Aug. 1934) point out that certain mothers give birth to babies with hemorrhagic disease, and that these babies are less responsive to treatment. They reported a ten year study of this subject and demonstrated a method of predicting hemorrhagic disease in a newborn. This has allowed them to detect a tendency early in pregnancy and to prevent trouble to the infant chiefly through the dietary.

The anemias of the newborn are fairly well understood with the exception of the anemia of the newborn of unknown cause that Abt described

(Am. J. Dis. of Children of Feb. 1932). The same may be said of edema of the newborn and erythroblastosis, and necroses of the subcutaneous fat tissue.

In this state for one year the total number of births reported was 74,743 in an estimated population of 3,217,000. This gives a birth rate of 23.2 per 1,000 population. The total number of stillbirths was 3,646 with a ratio of 4.8 per 100 live births.

We collected 50 stillbirth records at Watts Hospital over a period of two and a half years. During this time there were 1,115 live births which gives a ratio of 4.48 stillbirths per 1,000 live births.

RECORD OF STILL BIRTHS

I. Pregnancy Complications

Toxemias	15	Pneumonia	4
Pyelitis	3	Tuberculosis	1
Syphilis	1	No pregnacy complications	26

II. Onset of Labor

Started spontaneously	31	Medico-instrumental	4
Medical	3	Pituitrin alone	1
Instrumental	7	Bag	4

III. Length of Labor in Hours

0-1	4	10-20	5
1-5	14	20-0	13
5-10	14		

IV. Labor Complications

Partial separation	6	Compound presentation	3
Premature labor	5	Previous caesarian section	1
Failure of rotation	5	No labor complication	27

V. Medication During Labor

Morphine	14	Amytal and Hyocin	4
Amytal	25	Quinine	2
Morphine and Hyoscin	2	No medication	3

VI. Weight of Baby

Below 5 pounds	2	No recorded weight	43
Above 5 pounds	5	Of these "premature"	24
		Of these "mature"	19

In 1935-1936 there were 943 infants delivered at Watts Hospital, of which 870 were live births. There were 54 neonatal deaths (that is, died while the mother was in the hospital), which is 6.2% or 62 per 1,000 live births.

The tabulation follows:

Total Infant Neonatal Deaths 1935-1936

Total	54
Of primiparous mothers	34
Of multiparous mothers	20

Pelvimetry of Mother

Adequate pelvis	24
Contracted pelvis	4
No recorded pelvimetry	26

Serology of Mother

Positive Wassermann & Kahn	4
Negative Wassermann & Kahn	21
No record of Wassermann & Kahn	29

Complications of Pregnancy

Total	22
Toxemia	8
Pyelitis	5
Syphilis	4
Miscellaneous	5
No record	1
No complication	

Onset of Labor

Spontaneous	27
Induced	20
Medical	3
Instrumental	17
No labor	3

Fetal Heart Sounds

Heard	30
Not heard	8
No record	16

Obstetrical Diagnosis

Vertex	21
Breech	9
Compound	—
Multiple	3
Placenta Previa	4
No record	16

Duration of Labor in Hours

Up to and including 5 hours	24
5-20 hours	10
20 hours or more	20
No labor (compound complications)	4
Complications of labor	28
Prematurity	2

Abnormal Presentation

Breech	8
Compound	2
Failure to rotate	1
Placental separation	10
Contracted pelvis	4
Decomp lb.	1
No complication	26

Morphine During Labor

Morphine	10
No morphine	44

Type of Delivery

Spontaneous	31
Forceps	11
Section	9
Version	3

Weight of Infant in Pounds

0-3	10
3-5½	22
5½-7½	7
7½-10	1
No record	13

Duration of Infant Life

0-12 hours	37
12-24 hours	2
12-24 hours (Average duration 4 hours)	4
5 days and over	11

Condition of Infant at Birth

Good	12
Fair	2
Poor	28
No record	12

Cause of Infant Death

Prematurity	41
Cerebral hemorrhage	3
Miscellaneous	7

GENERAL STATISTICS

Total number of deliveries (single)	917
Total number of deliveries (twin)	15
Total number of Maternal deaths	12

COMMENT

A review of our records shows the inadequacy of the ordinary labor and delivery form. For the successful correlation of this data we recommend the form that is used by Bundesen and the Chicago group.

All newborns on the charity service are admitted to the pediatric service. The wisdom of this is evident. The pediatrician can and should familiarize himself with the special problems of the newborn.

Any study of the stillbirth and neonatal death incidence should occupy the combined efforts of the obstetrician, pediatrician, and pathologist. The pathologist also must know the different manifestations peculiar to the newborn.

In this locality the problem of the late toxemia of pregnancy still is the major factor in the maternal and infant mortality, the problem of prematurity is equally pressing. Both offer a rich reward for men who make a definite effort to overcome them. We think that the major problem is that of getting the patient to the doctor.

Chairman London: Thank you, Dr. Ross. These papers are now open for discussion.

Dr. C. R. Bugg (Raleigh): I am just going to give the ball a push as it passes. I am not going to add anything much.

I simply would like to stimulate discussion. I would like to hear a lot of the men talk about their feeling as to lumbar puncture in intracranial hemorrhage in the newborn. I think in view of the fact that there are two schools of feeling about it, it would be very interesting to note whether those two schools both have adherents in our group.

There is one particular point in which I have been interested. I have done more or less what Dr. Sidbury has done except that I have a feeling—I probably have no proper basis for it—that a lumbar puncture in the first day of life doesn't seem to go so good. I have seen two or three babies who had definite evidences of intracranial hemorrhage in the first twenty-four hours, who went bad, did worse, and died fairly soon after the lumbar puncture the first day. I wonder sometimes whether or not it has anything to do with the release of intracranial pressure stimulating further bleeding. I don't know. I don't know whether anybody knows. I just bring that out to stimulate discussion.

The next paper I wish to discuss is Dr. Ravenel's paper. I think I saw Dr. Babcock and Dr. Kugelmass here during his paper. Didn't they come in? I guess they both went out before he finished. I thought they might want to discuss it.

Dr. Ross' paper suggests, also, an idea to me that I have thought about a lot of times, something that I don't think, however, is very much of a problem in this state—at least not in our community. There is room for a great deal of trouble on the part of the pediatrician who uses careless words, a careless method of talking to the parents of a baby with intra-

cranial hemorrhage—I mean the baby who shows late evidences of intracranial hemorrhage. I know of one city of considerable size where the feeling among doctors is not so good, where there is constant warfare between the pediatricians and the obstetricians, because the pediatricians are not quite careful enough to explain that intracranial hemorrhage is not something always to be blamed on the obstetrician. I think we can explain perfectly easily the pathological condition present, and at the same time not load the blame onto the obstetrician. We can, as a matter of fact, take it off the obstetrician's shoulders.

I think that we probably all are careful about that. But I think that is something we can very easily do.

I have one other little idea here to stimulate discussion. It was simply this: that if we can get more autopsies on our newborns, I think we can learn lots more from autopsies on our own cases than we can from other people's statistics, in spite of the fact that they have tremendously greater numbers of cases than any of us have seen. If we can follow our own case to the autopsy room, we can get a great deal more out of it.

I don't know whether we are all quite as insistent on getting autopsies on newborns as we should be and putting together what we find. I think we have an opportunity to learn a great deal more from a few cases that we see through from the start than from reports by people who see a great many more cases.

Chairman London: Is there further discussion of these papers?

Dr. Wilburt C. Davison (Durham): I first wish to congratulate Dr. London, the speakers, and also the Section on this round-table discussion on this most important subject of pediatrics, obstetrics and general medicine. As Dr. London pointed out, the death-rate in children has been increasing since 1930 in this and other states in this country, and also in several foreign nations.

The analysis which Dr. Kerner made last year of the infant mortality in Durham County probably is typical of most communities. He found that the death-rate among infants under one month of age was the real cause of the increase, and that there was little change in the mortality among older infants. The probable reason for this increase in neonatal mortality is that the amount of ante-natal care has been very much decreased since the depression.

Another example is the demonstration by Dr. Gengenbach in Denver that increased ante-natal care will reduce the infant death-rate. He found that among the mothers who came in merely for delivery without ante-natal care, 175 children died out of every thousand births, but that if the mothers made eight or more ante-natal visits, only fifteen children per thousand deliveries died.

This reduction can be accomplished in any community if, as Dr. Ross says, the public will come to the doctors. It is an obstetrical problem, not

a pediatric problem, but especially it is a publicity problem. If the public would memorize, "Mothers, see your doctors as soon as you know you are pregnant," the infant death-rate would be halved. The doctor knows what to do, but the difficulty is getting the mothers to come to their physicians early in pregnancy so that the pelvis can be measured, the urine analyzed, a Wassermann reaction done, blood-pressure determined, signs of toxemia detected, and appropriate measures taken, before the mother is delivered.

In regard to lumbar punctures, obviously when the signs of pressure are great, the respiration and pulse slow, etc., they should be done, but to do them routinely in suspected birth injury is as likely to do harm as good.

The Boston group recently has emphasized a useful sign of intracranial damage or cerebral defect, i.e., when the head of an infant over one month of age is turned toward the shoulder, the arm on the side of the chin extends and the arm on the occipital side is flexed.

Dr. Aldert S. Root (Raleigh): I want to venture a homely observation, and yet it is important. Speaking of the care of the skin, the preparation that is used more than anything else is Mennen's powder. Dr. Bugg and I have had three cases of fatal pneumonia in young children who played with these open powder boxes, who got the powder into their noses, inspirated the powder, which caused this virulent type of bronchial pneumonia.

That is a danger which isn't appreciated by the public.

I think this discussion is extremely important because it brings to us the fact that in order to decrease the death rate in children, we have to decrease the mortality in the first forty-eight hours of life. With the funds provided by the Social Security Act, we now have a means of establishing prenatal clinics all over the country. Dr. Cooper's work in that respect is extremely important. He has established dozens of prenatal clinics throughout the communities in this section of the state, and eventually this will extend over the whole state. These prenatal clinics are so arranged that the general practitioners carry on the actual work, and a definite fund is provided for the payment of these doctors who do this work, and also for the hospitalization of women who have toxemias of pregnancy, premature separations, and so on.

Personally, I think that within the next five years we are going to see a tremendous decrease in infant mortality all over the whole country. (Applause)

Chairman London: Is there any further discussion? If not, may we have the report of the Nominating Committee?

Dr. Root: The Nominating Committee reports that it has elected Dr. Gette as chairman of the Pediatric Section for the ensuing year.

Chairman London: You have heard the report of the Nominating Committee. What is your wish?

. . . It was moved and seconded that the report be accepted. . .

CHAIRMAN LONDON: All in favor say "Aye"; opposed. Dr. Gette, the meeting is yours. (Applause)

CHAIRMAN-ELECT GETTE: Gentlemen of the Section: I want to assure you that I appreciate the honor that you have done me. I only hope that I can have a program next year that will be half as good as the one we have had today. I do think that we have had a most interesting program today. It has been a most timely program, and it has been very well presented. If we will use the publicity which this program might afford, I believe that the people in the state will really get some benefit from it.

Dr. Davison, along with several of the others, I think, touched the very heart of the situation here—publicity, publicity, and more of it.

There will be a meeting of the North Carolina Pediatric Society immediately following this meeting. If there is no further business to attend to, the meeting stands adjourned.

. . . The meeting thereupon adjourned at three-fifty o'clock. . .

WOMAN'S AUXILIARY

FIFTEENTH ANNUAL SESSION

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1936—Mrs. C. P. Eldridge.....Raleigh
1937—Mrs. J. R. Terry.....Lexington

MINUTES OF THE EXECUTIVE BOARD OF THE AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

The annual meeting of the Board of Directors of the Auxiliary to the Medical Society of the State of North Carolina was held at the home of Mrs. P. P. McCain at Sanatorium, North Carolina, October 20, 1936.

The Directors were cordially greeted by the doctors' wives from the Sanatorium. They were served a delightful luncheon by Mrs. McCain. After the luncheon the business meeting was held.

The meeting was called to order by the President, Mrs. J. R. Terry.

In the absence of Mrs. J. B. Sidbury, her report on the Constitution and By-Laws was read by Mrs. McCain. It was suggested by Mrs. Fred R. Taylor that the report of Mrs. Sidbury should be brought up at the State meeting.

The report of the Third Vice-President, Mrs. Roscoe McMillan, Chairman of the Loan Fund, was heard. Mrs. McMillan reported $476.72 in the treasury.

Mrs. Fred R. Taylor, Treasurer of the Auxiliary, reported a balance of $176.73.

Mrs. Erick Bell, Historian, presented her report.

The Public Relations Committee made their report. It was moved, seconded, and passed that Mrs. John D. Robinson continue with her radio work. It was also voted that Mrs. McCain be suggested as the speaker for the radio program.

Mrs. Paul Yoder made her report for the Hygeia Committee.

Mrs. J. M. Cooper reported for the Research Committee.

Mrs. Sidbury gave five dollars to the Fourth District for gaining the largest number of members. The five dollars will be added to the Endowment Fund.

Mrs. J. S. Hooker was released from office as Councilor of the Sixth District and Mrs. D. R. Perry was appointed to fill out her unexpired term.

Mrs. C. F. Strosnider, Mrs. J. M. Cooper, Mrs. J. B. Sidbury, and Mrs. Roscoe McMillan consented to be delegates to the Auxiliary of the Southern Medical Association, November 17-20, 1936.

Mrs. J. B. Sidbury was asked to write the history of the McCain Bed.

Mrs. Roscoe McMillian was asked to write the history of the Loan Fund.

The following members were selected for the Nominating Committee:

Mrs. J. B. Sidbury, Chairman, Third District, Wilmington, N. C.; Mrs. Erick Bell, Fourth District, Wilson, N. C.; Mrs. W. P. McKay, Fifth District, Fayetteville, N. C.; Mrs. A. K. Maness, Eighth District, Greensboro, N. C.; Mrs. Julian Moore, Tenth District, Asheville, N. C.

No other business coming before the meeting it was voted to adjourn.

MRS. J. ROY HEGE, *Secretary Pro Tem.*

MINUTES OF THE EXECUTIVE BOARD OF THE AUXILIARY TO THE MEDICAL SOCIETY OF NORTH CAROLINA

The Executive Board of the Woman's Auxiliary met Wednesday, March 24, 1937, with Mrs. J. R. Terry at her home in Lexington, N. C. Mrs. Terry served a delicious luncheon to the thirteen board members and eleven Lexington Auxiliary members.

Following the luncheon the meeting was called to order by the President, Mrs. Terry.

Plans for the approaching State Meeting were discussed and completed. Mrs. Wingate Johnson of Winston-Salem has consented to give the welcoming address. Dr. Cunningham, pastor of the First Presbyterian Church, will be asked to give the invocation, and Mrs. J. A. Knight the response to Mrs. Johnson.

Two deaths of doctors' wives were noted: Mrs. J. W. Richardson of Greensboro, N. C., and Mrs. Chas. Phillips of Thomasville, N. C.

Reports were given from Councillors.

Mrs. Roscoe McMillan reported for the Loan Fund and also from the Southern Medical Meeting held in Baltimore in November, 1936, stating that the State Auxiliary was voted a part of the Southern and that we no longer had to pay dues to them.

Mrs. Fred Taylor gave the Treasurer's report. Balance on hand in general fund, $188.64; loan fund, $381.60, with a loan of $100.00 already approved but not completed; bed fund, $316.83.

Mrs. P. A. Yoder reported for *Hygeia,* twenty-three subscriptions secured to date. It was also discussed and decided to let Mrs. Yoder take subscriptions to any other magazine that we can get a commission from.

Dr. Johnson, a former patient of our bed at the Sanatorium, has asked to assist Mrs. Yoder with this project.

Mrs. Knight of Greensboro has agreed to express thanks and appreciation to our hostesses at the State Meeting.

The minutes of the last board meeting were read and approved.

The board voted to have the history of the bed fund read at the State Meeting. This is to be written and read by Mrs. Sidbury and the history of the loan fund to be written and read by Mrs. Roscoe McMillan.

Mrs. Paul McCain suggested that a committee be appointed to work up suggested programs for local auxiliaries.

Mrs. Knight told of the lovely box the Guilford Auxiliary sent our bed patient, Marie Lowe, last Christmas.

Mrs. McCain reported that Marie Lowe had been taken over by her County and suggested that we take Henry Steegal, a 17-year-old boy from Oxford, N. C.

No further business, the meeting adjourned.

MRS. J. ROY HEGE, *Secretary Pro Tem.*

MONDAY, MAY 3

Guests of the convention may visit the Reynolds Tobacco Factory (Camels) at any time during their stay in Winston-Salem. Passes will be secured for them on request of Ladies Entertainment Committee.

8:30 p. m.—Cootie Party—Roof Garden.

TUESDAY, MAY 4

9:30 a. m.—Opening Session, State Medical Society.
President's Address, Dr. C. F. Strosnider, Goldsboro.
Presentation President's Jewel by the President-elect, Dr. Wingate M Johnson, Winston-Salem.
(Ball Room.)

10:00 a. m.—Executive Board Meeting (Roof Garden).

11:00 a. m.—Auxiliary Meeting (Roof Garden).

4:00 p. m.—Tea—Salem College.

9:00 p. m.—President's Reception and Fifteenth Annual Medical Society Ball.
(Ball Room.)

WEDNESDAY, MAY 5

11:00 a. m.—Bridge—Forsyth Country Club.

1:00 p. m.—Luncheon.

INFORMATION FOR LADIES

1. Register at Robert E. Lee Hotel on arrival and receive badge. $1.00 registration fee for all who do not present 1936-37 membership card.
2. Wear badge to all functions and register for all entertainment on arrival.

LADIES' ENTERTAINMENT COMMITTEE

Mrs. William H. Sprunt, Jr., *Chairman*
Mrs. G. Carlyle Cooke
Mrs. S. D. Craig
Mrs. C. O. DeLaney
Mrs. J. R. Hege
Mrs. S. W. Hurdle
Mrs. Wingate M. Johnson
Mrs. O. R. Keiger
Mrs. B. B. Pool
Mrs. R. R. Simmons
Mrs. A. DeT. Valk
Mrs. Paul A. Yoder

TUESDAY, MAY 4, 11:00 A.M., ROOF GARDEN

Call to Order.....Mrs. J. R. Terry, President
Prayer.....Dr. John R. Cunningham, Pastor First Presbyterian Church
Greetings.....Mrs. Wingate M. Johnson
Response.....Mrs. James A. Keiger
Memorial Service.....Mrs. I. H. Manning

BUSINESS SESSION

Report of Secretary.....Mrs. E. C. Judd
Report of Treasurer.....Mrs. Fred R. Taylor
Report of Chairman of Organization.....Mrs. C. P. Eldridge
Report of Chairman of Loan Fund.....Mrs. R. D. McMillan
Report of Chairman of McCain Bed.....Mrs. J. B. Sidbury
Report from American Medical Association.....Mrs. Forest M. Houser
Greetings from the Melical Society.....Dr. C. F. Strosnider, President
Report of Standing Committees:
Public Relations—Mrs. J. D. Robinson.....Wallace
Hygeia—Mrs. Paul A. Yoder.....Winston-Salem
Historian—Mrs. Erick Bell.....Wilson
Scrap Book—Mrs. C. D. Thomas.....Sanatorium
Jane Todd Crawford—Mrs. R. S. McGeachy.....Weldon
Memorial—Mrs. I. H. Manning.....Chapel Hill
Research—Mrs. G. M. Cooper.....Raleigh
Report of Courtesy Committee
Report from Nominating Committee.....Mrs. J. Buren Sidbury, Chairman
Election of Officers
Instaliation of Officers.....Mrs. P. P. McCain, Organizing President
Announcements.....Mrs. W. T. Rainey, Incoming President
Adjournment

Executive Board Meeting

GREETINGS

By MRS. WINGATE M. JOHNSON

If it is still true that actions speak louder than words, three words are all I need say to prove that never before in the history of the Auxiliary has a hostess city extended a warmer, more cordial welcome than it is my privilege to bring to you this morning.

These three words are "We have organized." Three weeks ago in anticipation of your coming, the Woman's Auxiliary to the Forsyth County Medical Society was organized, its first act being to give you a royal welcome and to make your stay in our city one to be remembered. This common bond makes us gladder than ever to have you as our guests for this Annual Meeting.

It is said "When Greek meets Greek they both smile—they are one to each other." So the doctors' wives of the Medical Society are smiling broadly today, while we may not know each one of you personally, with the same problems, the same responsibilities, the same worries, and the same joys, we are sisters under the skin.

We all know what a diabolical invention the telephone is, how to serve hot meals at all hours, how to smile sweetly when seething inwardly, how to make all social engagements with reservations, how to placate unreasonable patients, and tired, irritated husbands, and even how to share the viewpoint of the little girl who defined a lie as an abomination in the sight of the Lord and an ever-present help in the time of trouble.

We know, too, how hard it is to love our neighbor as ourselves when she has the pretty clothes, the lovely home, the stream-lined car, and the expensive trips we want and could have if she paid our husband for services rendered over a long period of years!

But above all we know the joy that comes from the high privilege of having a part in a divine vocation for some one has said "That if a doctor's life is not a divine vocation, then no life is a vocation and nothing is divine."

To make you feel the welcome that is in our hearts I would have to be the possessor of as eloquent and picturesque vocabulary as was the old negro preacher, who prayed this prayer in a Georgia turpentine camp meeting, "O Lawd, give thy servant dis morning de eye of the eagle, and de wisdom of the owl. Connect his soul wid de gospel telephone in de central skies, luminate his brow wid de sun ob heaven, turpentine his 'magination, grease his lips wid possum oil, loosen his tongue wid de sledge hammer ob thy power, 'lectrify his brain wid de lightening of Thy Word. Put 'petual motion in his arms, fill him plum full ob de dynamite ob Thy Glory, 'noint him all over wid kerosene ob Thy salvation, den Dear Lord, set him on fire!"

Being neither eloquent nor wordy I trust the genuineness of our welcome is already speaking so loudly that you can not hear what I am attempting to say.

Members of the Auxiliary and friends, it is a real privilege and pleasure to have you as our guests.

Each one of us would like to say to each one of your personally, the old Irish welcome,

"Come in the evening, come in the morning,
Come when expected, come without warning.
Thousands of welcomes you will find here before you,
And the oftener you come, the more we'll adore you."

RESPONSE

By Mrs. James A. Keiger

Madam President and Ladies of Winston-Salem and Forsyth County Auxiliary, we salute you and congratulate you, our youngest County Medical Auxiliary. You who are entering into the duties and pleasures of an organization, which lives, that fellowship and friendliness may exist

among a given group of people—that a helping hand may be extended along the way of life.

You may be an infant organization, but you are certainly a lusty one, and I should predict a howling success—a full fledged and royal entertainer.

Those of us who live near you have always known of the beauty and historic interest of your city—of its great industries—its charming people —and those who live at a distance are fast learning of these things, through this visit.

We are having a wonderful time with you.

You have provided every comfort and pleasure for us. You have surely "set us on fire," with enthusiasm by your generous interest and concern for our pleasure.

You are making for us, of this your christening event, a truly memorable occasion.

We shall take leave of you with deepest regret, but we shall be refreshed anew with the happy memory of your matchless Good Will and of your Boundless Hospitality.

We thank you.

MEMORIAL SERVICE

During the past year, God, in His infinite wisdom, has seen fit to remove from our earthly circle—

Mrs. C. H. Phillips of Thomasville
Mrs. J. C. Grady of Kenly
Mrs. J. W. Richardson of Greensboro
Mrs. Charles O'Hagan Laughinghouse

To hearts stricken with grief come these words: *"I am the resurrection and the life: he that believeth in me though he were dead, yet shall he live: and whosoever liveth and believeth in me shall never die."*

And now, Lord, what is my hope? truly my hope is even in Thee.

I know that my Redeemer liveth. I heard a voice from heaven, saying unto me, write, from henceforth blessed are the dead who died in the Lord: even so saith the Spirit; for they rest from their labors.

Let us pray.

O Lord, Jesus Christ, who by Thy death didst take away the sting of death; grant unto us Thy servants so to follow in faith where Thou hast led the way, that we may at length fall asleep peacefully in Thee and awake after Thy likeness; through Thy mercy, who livest with the Father and Holy Spirit, one God, world without end. And say as he bade us say

Our Father, who art in heaven,
Hallowed be Thy name, Thy kingdom come,
Thy will be done on earth, as it is in heaven,
Give us this day, our daily bread,
And forgive us our trespasses,
As we forgive those who trespass against us,
And lead us not into temptation;
But deliver us from evil.
For Thine is the kingdom, and the power and the glory
forever and ever. *Amen.*

Now the laborer's task is o'er;
Now the battle day is past;
Now upon the farther shore
Land the voyager at last.
Father, in Thy gracious keeping
Leave we now Thy servants sleeping.

There the tears of earth are dried;
There its hidden things are clear;
There the work of life is tried
By a juster Judge than here.
Father, in Thy gracious keeping
Leave we now Thy servants sleeping.

Respectfully submitted,
MRS. ISAAC H. MANNING

TREASURER'S REPORT

MRS. FREDERICK R. TAYLOR, High Point

RECEIPTS AND DISBURSEMENTS, MAY 26, 1936, TO MAY 20, 1937

Balance on Deposit May 26, 1936, McCain Bed Fund (upkeep)	$176.73	
General Fund	56.15	
Dues for 13 members for 1935-1937	13.00	
		$ 245.88
Dues from 281 (1936-1937)	$281.00	281.00

McCAIN BED FUNDS

CONTRIBUTIONS TO McCAIN ENDOWMENT FUND

Balance on Deposit, May 26, 1936	$100.83
Contributions secured by Mrs. J. M. Sidbury (bed chairman).	
Mrs. S. Douglas Craig	100.00
Mrs. Donnell Cobb	5.00
Mrs. B. R. Graham	4.00
Mrs. McNeil Smith	2.00
Miss Mildred Hutaff	5.00
Dr. Addison Brenizer	5.00
Mrs. Charles Allen	1.00

Mrs. J. M. Covington	1.00	
Mrs. James M. Davis	1.00	
Mrs. Felda Hightower	1.00	
Mrs. F. Y. Sorrell	1.00	
Mrs. J. M. Sidbury	1.00	
Mrs. Paul Yoder, Hygeia Commissions	38.75	
New Hanover Co. Bridge Party	83.00	
Wake Co. Auxiliary	35.00	
Guilford Co. Auxiliary	5.00	
Prize Given by Mrs. Sidbury to Aux. having most members	5.00	
Dr. J. Samuel Johnson	350.00	
Interest on savings	1.53	
		$ 746.11

UPKEEP OF BED FUND

October 15, 1936, Dividend on Charlotte Nat. Bank	$ 3.04	
March 12, 1937, Dividend on Charlotte Nat. Bank	2.54	
This Fund came from Robeson Co. Auxiliary:		
Mrs. J. Street Brewer	2.00	
Mrs. Joseph A. Elliott	2.00	
Mrs. M. W. Marr	1.00	
Mrs. Brodie Nalle	1.50	
Mrs. W. S. Dosher	1.00	
Mrs. John Symington	1.00	
Mrs. John Martin	1.00	
Mrs. B. C. Willis	1.00	
Dr. D. Pollock	1.00	
Moore Co. Auxiliary	.75	
		$ 17.83

STUDENT LOAN FUND

Balance on Deposit May 26, 1936	$869.82	
From Mrs. Roscoe McMillan (Hoke Co. Aux.)	2.50	
Interest on savings	11.18	
		$ 883.50
June 8, 1936, Loan to Miss Margaret Knight	$ 60.00	
October 16, 1936, Loan to Miss Margaret Knight	140.00	
September 15, 1936, Loan to Miss Eula Grace Whittington	200.00	
February 10, 1937, Loan to Miss Margaret Whittington	100.00	
		500.00
Balance in Bank May 20, 1937		$ 383.50

DISBURSEMENTS

Dues to American Medical Auxiliary for 281 members @25c	$ 70.25	
Dues to Southern Medical Auxiliary	10.00	
To Fred O. Sink for Printing	10.94	
For Stamps, phone calls (for two years)	5.00	
To Mrs. J. R. Terry for office expense	5.00	
To N. C. Sanatorium for treatment, board and laundry	149.63	
		$ 250.82
Upkeep of Bed Fund	$335.06	
Expenses for 1936-1937	149.63	
		$ 185.43
General Expense Fund	$126.30	

Expenses for 1936-1937	30.94	
General Fund		$ 95.36
Balance on Deposit Loan Fund	$383.50	
Loans	500.00	
		$ 883.50
Balance on McCain Endowment Fund		746.11
Eighty-one Members at Large		81.00
Sixteen Members Dues for 1938		16.00
		$2007.40

Respectfully submitted,
MRS. FREDERICK R. TAYLOR, *Treasurer.*

ROSTER OF MEMBERS

1936-1937

Adams, Mrs. C. N. ..... Winston-Salem
Andrew, Mrs. J. M. ..... Lexington
Anders, Mrs. McG. ..... Gastonia
Alexander, Mrs. G. T. ..... Thomasville
Allan, Mrs. George ..... Lumberton
Ashworth, Mrs. W. C. ..... Greensboro
Avery, Mrs. E. S. ..... Winston-Salem
Banner, Mrs. W. C. ..... Greensboro
Bandy, Mrs. W. G. ..... Lumberton
Baker, Mrs. H. M. ..... Lumberton
Barefoot, Mrs. Graham ..... Wilmington
Beard, Mrs. G. C. ..... Atkinson
Beam, Mrs. R. S. ..... Lumberton
Beam, Mrs. R. M. ..... Roxboro
Bender, Mrs. J. R. ..... Lexington
Benton, Mrs. G. R. ..... Goldsboro
Beckwith, Mrs. S. M. ..... Roanoke Rapids
Blair, Mrs. J. L. ..... Gastonia
Blanchard, Mrs. T. W. ..... Hobbsville
Bowman, Mrs. E. L. ..... Lumberton
Bonner, Mrs. M. D. ..... Jamestown
Bittinger, Mrs. S. M. ..... Sanatorium
Bizzelle, Mrs. M. E. ..... Goldsboro
Britt, Mrs. J. N. ..... Lumberton
Briggs, Mrs. Charles ..... Raleigh
Brown, Mrs. G. W. ..... Raeford
Brewer, Mrs. J. Street ..... Roseboro
Bridges, Mrs. D. H. ..... Bladenboro
Brockman, Mrs. Harry ..... High Point
Brown, Mrs. J. P. ..... Fairmont
Brown, Mrs. S. M. ..... Roanoke Rapids
Bryan, Mrs. L. D. ..... Sneeds Ferry
Brooks, Mrs. E. M. ..... Winston-Salem
Buffaloe, Mrs. J. S. ..... Garner
Bulla, Mrs. A. C. ..... Raleigh
Buie, Mrs. R. M. ..... Greensboro
Bullock, Mrs. E. S. ..... Wilmington
Cathell, Mrs. E. J. ..... Lexington
Campbell, Mrs. A. S. ..... Raleigh
Carpenter, Mrs. C. C. ..... Wake Forest
Carter, Mrs. Paul ..... Madison
Castevens, Mrs. J. C. ..... Winston-Salem
Casteen, Mrs. Kenan ..... Leaksville
Caviness, Mrs. Verne ..... Raleigh
Chester, Mrs. P. J. ..... Southern Pines
Clayatt, Mrs. C. E. ..... Denton
Cobb, Mrs. Donnell B. ..... Goldsboro
Codington, Mrs. Herbert ..... Wilmington
Coleman, Mrs. G. S. ..... Raleigh
Combs, Mrs. Fielding ..... Winston-Salem
Covington, Mrs. J. M. C. ..... Goldsboro
Corbett, Mrs. J. P. ..... Swansboro
Cozart, Mrs. W. S. ..... Fuquay
Cook, Mrs. G. C. ..... Winston-Salem
Cooper, Mrs. G. M. ..... Raleigh
Cooke, Mrs. Quinton H. ..... Rich Square
Craig, Mrs. S. Douglas ..... Winston-Salem
Cramner, Mrs. John S. ..... Wilmington
Crouch, Mrs. A. McR. ..... Wilmington
Crumpler, Mrs. J. L. ..... Rocky Mount
Dalton, Mrs. W. N. ..... Winston-Salem
Davis, Mrs. Philip W. ..... High Point
Davis, Mrs. R. B. ..... Greensboro
Davis, Mrs. J. M. ..... Wadesboro
Dawson, Mrs. James ..... Bolton
Dees, Mrs. Rigdon ..... Greensboro
Dewar, Mrs. W. B. ..... Raleigh
DeLany, Mrs. C. C. ..... Winston-Salem
Dickson, Mrs. K. D. ..... Raleigh
Dixon, Mrs. W. H. ..... Rocky Mount
Dosher, Mrs. W. S. ..... Southport
Drummond, Mrs. C. S. ..... Winston-Salem
Dulla, Mrs. Fred M. ..... Lenoir
Durham, Mrs. C. W. ..... Greensboro
Eldridge, Mrs. C. P. ..... Raleigh
Elliott, Mrs. W. M. ..... Forest City
Elliott, Mrs. Joseph A. ..... Charlotte
Elliott, Mrs. A. H. ..... Wilmington

Evans, Mrs. J. E. ..... Wilmington
Farrington, Mrs. R. R. ..... Thomasville
Fearing, Mrs. C. S. ..... Winston-Salem
Finch, Mrs. O. E. ..... Raleigh
Flagge, Mrs. Phillip W. ..... High Point
Fleming, Mrs. M. I. ..... Rocky Mount
Flowers, Mrs. Charles ..... Zebulon
Fox, Mrs. Norman ..... Guilford College
Fox, Mrs. R. E. ..... Raleigh
Fox, Mrs. P. G. ..... Raleigh
Freeman, Mrs. J. D. ..... Wilmington
Garvey, Mrs. R. R. ..... Winston-Salem
Garvey, Mrs. Fred ..... Winston-Salem
Gibson, Mrs. M. R. ..... Raleigh
Glascock, Mrs. H. L. ..... Raleigh
Goodwin, Mrs. O. S., Jr. ..... Apex
Goodman, Mrs. A. B. ..... Lenoir
Gooding, Mrs. J. V. ..... Raleigh
Graham, Mrs. Ben R. ..... Wilmington
Grayson, Mrs. C. S. ..... High Point
Griffis, Mrs. J. W. ..... Denton
Groome, Mrs. J. G. ..... High Point
Hamer, Mrs. Douglas, Jr. ..... Lenoir
Harrison, Mrs. E. T. ..... High Point
Hart, Mrs. O. J. ..... Winston-Salem
Harrell, Mrs. L. T. ..... Goldsboro
Harper, Mrs. F. T. ..... Sanatorium
Hedgepeth, Mrs. L. R. ..... Lumberton
Hege, Mrs. J. Roy ..... Winston-Salem
Hedrick, Mrs. Clyde R. ..... Lenoir
Hester, Mrs. J. R. ..... Wendell
Hicks, Mrs. V. M. ..... Raleigh
Hill, Mrs. M. D. ..... Raleigh
Holmes, Mrs. Byron A. ..... Fairmont
Hoggard, Mrs. J. T. ..... Wilmington
Houser, Mrs. F. M. ..... Cherryville
Howard, Mrs. C. E. ..... Goldsboro
Hubbard, Mrs. C. C. ..... Farmer
Hudson, Mrs. C. C. ..... Greensboro
Hunt, Mrs. W. S. ..... Lexington
Hurdle, Mrs. Sam ..... Winston-Salem
Hunter, Mrs. J. P. ..... Cary
Huston, Mrs. J. W. ..... Asheville
Hutchinson, Mrs. S. S. ..... Bladenboro
Ivey, Mrs. H. B. ..... Goldsboro
Jackson, Mrs. Walter L. ..... High Point
Jennings, Mrs. R. G. ..... Thomasville
Johnson, Mrs. W. M. ..... Winston-Salem
Johnson, Mrs. Paul ..... Winston-Salem
Johnson, Mrs. J. R. ..... Ramseur
Johnson, Mrs. T. C. ..... Lumberton
Johnson, Mrs. George ..... Wilmington
Jones, Mrs. Beverly ..... Winston-Salem
Jones, Mrs. C. C. ..... Raleigh
Jones, Mrs. Rives ..... Winston-Salem
Judd, Mrs. E. Clarence ..... Raleigh
Judd, Mrs. James M. ..... Raleigh
Justice, Mrs. L. H. ..... Littleton
Keiger, Mrs. James A. ..... Greensboro
Keiger, Mrs. O. R. ..... Winston-Salem
Kent, Mrs. A. A. ..... Lenoir
Kirby, Mrs. W. L. ..... Winston-Salem
Knight, Mrs. W. P. ..... Greensboro
Knox, Mrs. John ..... Lumberton
Knox, Mrs. J. C. ..... Raleigh
Kornegay, Mrs. L. W. ..... Rocky Mount
Lane, Mrs. J. L. ..... Rocky Mount
Lancaster, Mrs. W. J. ..... Wilmington
Lassiter, Mrs. H. G. ..... Weldon
Lawrence, Mrs. Ben J. ..... Raleigh
Leonard, Mrs. J. C. ..... Lexington
Lilly, Mrs. J. M. ..... Fayetteville
Long, Mrs. T. W. M. ..... Roanoke Rapids
Lore, Mrs. Ralph ..... Lenoir
Love, Mrs. B. E. ..... Roxboro
Lowery, Mrs. E. F. ..... Raleigh
Mackie, Mrs. G. C. ..... Wake Forest
Maddry, Mrs. M. C. ..... Ronoake Rapids
Mann, Mrs. I. T. ..... High Point
Maness, Mrs. A. K. ..... Greensboro
Marr, Mrs. Marguerete ..... Southern Pines
Marr, Mrs. M. W. ..... Southern Pines
Martin, Mrs. J. A. ..... Lumberton
Martin, Mrs. John ..... Goldsboro
Matthewson, Mrs. R. A. ..... Raeford
Miller, Mrs. R. B. ..... Goldsboro
Miller, Mrs. R. C. ..... Gastonia
Mitchiner, Mrs. J. S. ..... Raleigh
Merritt, Mrs. J. H. ..... Roxboro
Morton, Mrs. Roy ..... Raleigh
Mock, Mrs. F. L. ..... Lexington, Rt. 3
Moore, Mrs. Huston ..... Wilmington
Moore, Mrs. R. A. ..... Winston-Salem
Munt, Mrs. H. F. ..... Winston-Salem
Murchison, Mrs. David ..... Wilmington
Murry, Mrs. R. L. ..... Lumberton
Mudgette, Mrs. W. C. ..... Southern Pines
McAnally, Mrs. J. W. ..... High Point
McCain, Mrs. Paul P. ..... Sanatorium
McCaim, Mrs. Walkup ..... High Point
McCants, Mrs. C. H. ..... Winston-Salem
McChesney, Mrs. W. M. ..... Gastonia
McDowell, Mrs. A. R. ..... Scotland Neck
McGee, Mrs. Robert ..... Raleigh
McGee, Mrs. J. W. ..... Raleigh
McGeachy, Mrs. R. S. ..... Weldon
McMillan, Mrs. Roscoe ..... Red Springs
Nalle, Mrs. Brodie C. ..... Charlotte
Nichols, Mrs. A. F. ..... Roxboro
Nicholson, Mrs. B. M. ..... Enfield
Oliver, Mrs. A. S. ..... Raleigh
Ogburn, Mrs. L. C. ..... Winston-Salem

Outland, Mrs. ..... Rich Square
Ormand, Mrs. A. L. ..... Sanatorium
Owen, Mrs. J. F. ..... Dix Hill, Raleigh
Pace, Mrs. K. B. ..... Greenville
Paddison, Mrs. J. R. ..... Kernersville
Parker, Mrs. O. L. ..... Clinton
Patterson, Mrs. Reid ..... Charlotte
Pearson, Mrs. E. Cooper ..... Goldsboro
Perkins, Mrs. Russell ..... Winston-Salem
Poole, Mrs. Bennett ..... Winston-Salem
Pope, Mrs. Henry T. ..... Lumberton
Powers, Mrs. Frank ..... Raleigh
Pugh, Mrs. C. H. ..... Gastonia
Ray, Mrs. John B. ..... Leaksville
Ramsour, Mrs. J. T. ..... Cherryville
Rainey, Mrs. W. T. ..... Fayetteville
Redwine, Mrs. J. C. ..... Lexington
Rhodes, Mrs. John ..... Raleigh
Roberts, Mrs. W. M. ..... Gastonia
Robertson, Mrs. W. N. ..... Fayetteville
Robinson, Mrs. John ..... Wallace
Root, Mrs. Alred ..... Raleigh
Rogers, Mrs. J. R. ..... Raleigh
Royster, Mrs. Hubert ..... Raleigh
Rousseau, Mrs. J. P. ..... Winston-Salem
Salmon, Mrs. Lee ..... Winston-Salem
Schoonover, Mrs. R. A. ..... Greensboro
Schallart, Mrs. P. C. ..... Winston-Salem
Seay, Mrs. H. L. ..... Sanatorium
Sessoms, Mrs. E. T. ..... Roseboro
Shaw, Mrs. Colin ..... Atkinson
Shaw, Mrs. J. A. ..... Fayetteville
Sharpe, Mrs. Frank ..... Greensboro
Sherrell, Mrs. P. M. ..... Thomasville
Sink, Mrs. Rex ..... Winston-Salem
Sidbury, Mrs. J. Buren ..... Wilmington
Simmons, Mrs. R. R. ..... Winston-Salem
Slate, Mrs. Marvin ..... High Point
Smith, Mrs. J. Sidney ..... Raleigh
Smith, Mrs. W. G. ..... Thomasville
Smith, Mrs. John McNeil ..... Rowland
Sloop, Mrs. Mary Martin ..... Crossnore
Southard, Mrs. C. C. ..... Greensboro
Stanton, Mrs. D. A. ..... High Point
Stanton, Mrs. T. M. ..... High Point
Stone, Mrs. Grady ..... King
Street, Mrs. C. A. ..... Winston-Salem
Strosnider, Mrs. C. F. ..... Goldsboro
Speas, Mrs. Dallas ..... Winston-Salem
Speas, Mrs. Paul ..... Winston-Salem
Spicer, Mrs. P. M. ..... Winston-Salem
Sprunt, Mrs. W. H. ..... Winston-Salem
Speight, Mrs. J. T. ..... Rocky Mount
Suiter, Mrs. W. G. ..... Weldon
Sumner, Mrs. Emmett ..... High Point
Sykes, Mrs. R. P. ..... Asheboro
Symington, Mrs. John ..... Carthage
Taylor, Mrs. Frederick R. ..... High Point
Taylor, Mrs. Wesley ..... Greensboro
Taylor, Mrs. W. ..... Burgaw
Terry, Mrs. J. R. ..... Lexington
Thomas, Mrs. C. D. ..... Sanatorium
Thompson, Mrs. E. S. ..... Winston-Salem
Thaxton, Mrs. B. A. ..... Roxboro
Thigpen, Mrs. H. G. ..... Scotland Neck
Tice, Mrs. Walter ..... High Point
Turner, Mrs. Henry ..... Raleigh
Turlington, Mrs. W. T. ..... Jacksonville
Tuttle, Mrs. R. F. ..... Winston-Salem
Valk, Mrs. Arthur DeT. ..... Winston-Salem
Vestal, Mrs. W. J. ..... Lexington
Walton, Mrs. R. G. ..... St. Paul
Wall, Mrs. Roscoe ..... Winston-Salem
Warwick, Mrs. H. C. ..... Greensboro
Wessell, Mrs. John C. ..... Wilmington
West, Mrs. Louis ..... Raleigh
Weathers, Mrs. B. ..... Roanoke Rapids
Williams, Mrs. J. B. ..... Sanatorium
Wilson, Mrs. C. L. ..... Lenoir
Wilkins, Mrs. J. W. ..... Mt. Olive
Wolf, Mrs. N. C. ..... Burgaw
Woodard, Mrs. A. G. ..... Goldsboro
Wright, Mrs. J. B. ..... Raleigh
Wright, Mrs. O. E. ..... Winston-Salem
Wyatt, Mrs. Worthum ..... Winston-Salem
Yoder, Mrs. Paul ..... Winston-Salem
Yokely, Mrs. R. V. ..... Thomasville
York, Mrs. A. A. ..... High Point
Zimmermann, Mrs. R. U. ..... Lexington, R. F. D.

REPORT OF THE THIRD DISTRICT

The outstanding achievement in the Third District was a benefit bridge party given by the New Hanover County Auxiliary of which Mrs. J. D. Freeman was President. The party was held at the Cape Fear Country Club and bridge was played at 63 tables. Tea was served from a beautifully appointed table. As a result of this party we cleared $83.00 for the McCain Bed.

The New Hanover County Auxiliary held three meetings during the year. All doctors' wives in the district were invited to one of these meetings. At the last meeting the Auxiliary voted to make the card party an annual affair.

The New Hanover County Auxiliary is the only active unit in the district at the present time. I hope that enough interest can be aroused in the district to organize other county auxiliaries or one large district auxiliary.

Respectfully submitted,

ELIZABETH M. BAREFOOT

REPORT OF FOURTH DISTRICT

Membership, 33 paid members.

I wrote some letters and made visits to several towns in my district trying to organize auxiliary units. I could not get local organizations, but did get some one to work up memberships.

Mrs. G. E. McGeachy always collects dues from her county. In Wayne County an auxiliary is in force with Mrs. Wm. H. Smith as President.

Conclusion: The results in the district depend largely upon the activities of the councillor.

Respectfully submitted,

ANNA L. STROSNIDER,
Councillor Fourth District

REPORT OF SIXTH DISTRICT

Only two auxiliaries are organized in the Sixth District—Wake County and Person County. This Councillor, in filling out the unexpired term of the appointed Councillor, did not assume the duties of this office until it was too late in the season to do any further organization work which seems to be the most urgent need in this district at present. So large a district should have a number of active auxiliaries, though I am told that the failure of some of the largest towns in the district to organize auxiliaries is due to indifference on the part of the doctors' wives. This seems to call for a good-will movement on the part of the State organization.

The Auxiliary to the Wake County Medical Society, a member of the Sixth District, held two meetings during the year. On the occasion of the first, thirty members had luncheon together at the Hotel Carolina in Raleigh, and a business session followed. During the year the Auxiliary enrolled forty-seven members. The wife of every doctor registered as a member of the Wake County Medical Society was contacted, invited to join the County Auxiliary and given every possible opportunity to do so. With Mrs. C. C. Carpenter of Wake Forest as chairman of ways and means, $35.00 was raised for the McCain Bed Fund and forwarded to Mrs. J. B. Sidbury. In this work 76 doctors' wives were contacted and

many letters were written, so the Wake County Auxiliary has been well advertised this year, even if the response has been no better. At the beginning of the year 76 *personal* letters, written in long hand, were sent to doctors' wives, inviting them to the luncheon meeting which was held. With this letter went mimeographed copies fully explaining all the activities of the State Auxiliary and giving the reasons for its existence and the reasons why every doctor's wife should be a member. From the National Chairman of *Hygeia* magazine came an emergency appeal for five subscriptions to which the Wake County Auxiliary immediately responded. The Auxiliary bought four of the subscriptions out of its own funds and will place copies of *Hygeia* magazine for one year in the reception rooms of Rex Hospital, Saint Agnes (Negro) Hospital, the State Penitentiary, and the Olivia Raney Public Library. Mrs. B. J. Lawrence served as local *Hygeia* chairman.

The officers of the Wake County Auxiliary this year are Mrs. Sidney Smith, President; Mrs. James M. Judd, Vice-President; Mrs. Verne Caviness, Secretary & Treasurer.

A report has been requested but not yet received from Person County Auxiliary.

Mrs. Sidney Smith, *Councillor.*

REPORT OF SEVENTH DISTRICT

Madam President and Members of the Auxiliary:

During the past year I have attended the two Executive Committee meetings that have been called by our President.

At the time of the Seventh District Medical Society meeting held in Gastonia the past fall, we organized the Seventh District Auxiliary. It is the intention of this auxiliary to meet each fall at the same time and place as the meeting of the Seventh District Medical Society.

Respectfully submitted,

Mrs. F. M. Houser

REPORT OF EIGHTH DISTRICT

As Councillor of the Eighth District, I submit the following report.

We have 82 members in the Eighth District. Thirty-one are members of the Auxiliary to the Medical Society of Guilford County; 48 are members of the Auxiliary to the Medical Society of Forsyth County; two are from Rockingham County; one from Randolph.

I'm sure, after this meeting there will be others, from the other six counties. Please send in your membership before our State meeting next year.

Our district had two lovely district meetings. The Guilford County Auxiliary held four meetings, three were dinner meetings well attended,

and a well planned, good program. One was a luncheon meeting, held just before Christmas. The tables were lovely with their Christmas decorations, and our State President, Mrs. Terry, was our guest speaker.

The members brought beautifully wrapped packages containing pajamas, hose, underwear, powder, soap, kleenex, wash cloths, hand lotion, stationery, games, books and candy, to be sent as our Christmas shower to Marie Lowe, who was then occupying our bed in the Sanatorium. If you haven't tried sending a shower to a patient in Sanatorium, we heartily recommend it, as a source of much joy.

Your councillor attended two board meetings and kept in contact with our work through letters and cards.

The Guilford County Auxiliary sent $5.00 to the McCain Bed Endowment Fund. Mrs. Douglas Craig of Winston-Salem sent $100.00, and Mrs. Paul Yoder of Winston-Salem, our State *Hygeia* chairman, from commissions from *Hygeia,* sent in $38.75, making a total to the McCain Bed Endowment Fund of $143.75 from the Eighth District.

Respectfully submitted,

(Mrs. W. P.) Nell H. Knight

REPORT OF NINTH DISTRICT

The Ninth District of the Auxiliary to the Medical Society held their annual meeting in Salisbury, N. C., September 24, 1936. The meeting was well attended and all in attendance spent a pleasant day.

There are to date thirty paid members with more expected during the convention.

Activities of the district consisted of a sunshine box being sent to Miss Marie Lowe, the occupant of the McCain bed at Sanatorium, the selling of eight copies of *Hygeia,* a shower of groceries and home-made can goods to a disabled doctor and family, membership dues paid for four widows of doctors in this district, and scrap-books for children were made for several of the hospitals.

Your Councillor mailed out cards urging all the doctors' wives to attend the District Meeting in Salisbury, also has made many efforts to contact ladies in different towns of the district in an attempt to organize each county of the district. So far we have been unable to organize any new auxiliaries.

Our next annual meeting will be held in Hickory, N. C., September 23, 1937.

Mrs. Clyde R. Hedrick,

Councillor of the Ninth District of the Medical Auxiliary.

REPORT OF HYGEIA CHAIRMAN

Your Chairman has written 43 state, and two national letters in the interests of *Hygeia.*

Also arranged for Health Talks to two industrial groups to which *Hygeia* has been made available.

She has sent in to *Hygeia* for the State 31 one-year subscriptions. The commission, amounting to $38.75, was turned over to Mrs. J. B. Sidbury, Chairman of Bed Fund.

Commissions were applied to funds as follows: McCain Bed Fund, $5.00, by request of Caldwell County Auxiliary; McCain Bed Endowment Fund, $33.75.

Counties sending in subscriptions were: New Hanover 1, Hoke 1, Caldwell 8, Forsyth 21.

Respectfully submitted,
(Mrs. Paul A.) Evelyn D. Yoder

STUDENT LOAN FUND

Mrs. Roscoe McMillan, Chairman

Balance on Deposit May 26, 1936	$869.82	
From Hoke Co. Auxiliary	2.50	
Interest	11.18	
		$883.50

LOANS MADE DURING THE YEAR

To Miss Margaret Knight, June 8, 1936	$ 60.00	
To Miss Margaret Knight, October 1936	140.00	
To Miss Eula Grace Whittington, September 15, 1936	200.00	
To Miss Margaret Whittington, February 10, 1937	100.00	
	$500.00	$383.50
Balance in Bank, May 1, 1937		$383.50

REPORT OF McCAIN ENDOWMENT FUND

Mrs. J. Buren Sidbury, Chairman

Report submitted by Mrs. F. R. Taylor, Treasurer

Mrs. Sidbury has written letters to doctors' wives all over the State asking for donations for the upkeep of the McCain Bed and the Endowment Fund (giving all the postage) with the following results:

Balance on Deposit, May 26, 1936	$100.00
Interest	1.53
	$102.36

DONATIONS SECURED BY MRS. SIDBURY

Mrs. S. Douglas Craig	$100.00	
Dr. Addison Brenizer	5.00	
Mrs. Donnell Cobb	5.00	
Miss Mildred Hutaff	5.00	
Mrs. B. R. Graham	4.00	
Mrs. J. McNeil Smith	2.00	
Mrs. Paul Yoder, Hygeia Commissions	38.75	
Mrs. Sidbury to Society having most members	5.00	
New Hanover Co. Auxiliary Bridge Party	83.00	
Guilford Co. Auxiliary	5.00	
Wake Co. Auxiliary	35.00	
Five Wadesboro doctors' wives	5.00	
Dr. J. Samuel Johnson	350.00	
A Friend	1.00	
	$643.75	$746.11

UPKEEP OF McCAIN BED

Dividends on Charlotte National Bank—From Robeson County Auxiliary		
Oct. 15, 1936	$3.04	
March 12, 1937	2.54	
Donations:		
Mrs. J. Street Brewer	2.54	
Mrs. Joseph A. Elliott	2.00	
Mrs. Brodie C. Nalle	1.50	
Mrs. M. W. Marr	1.00	
Mrs. William S. Dosher	1.00	
Mrs. John W. Symington	1.00	
Mrs. John W. Martin	1.00	
Mrs. B. C. Willis	1.00	
Dr. D. Pollock	1.00	
		$17.08

GREETINGS TO THE AUXILIARY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

By C. F. Strosnider, M.D., President, Medical Society of the State of North Carolina

My friends, I am delighted to have the honor and pleasure of bringing to you greetings from the Medical Society of the State of North Carolina. I want to take this occasion to congratulate the officers and you members for the progress you have made this year in furthering the object of your organization, which is, to promote unity, harmony and cooperation between the members of the medical profession; to inform the public on the traditions, aims and accomplishments; and, to promote the interests of the medical profession in its relations with the public.

The Auxiliary's sphere of activity is great. There are many fields in which the group may extend its efforts with most gratifying results. One of these is education, and here is meant education not only of others but of

oneself. It is well known that knowledge is power, and if the Auxiliary is to accomplish what it has set out to do its members must cultivate this power. The public in the recent years has become distinctly "health conscious," and with interest in affairs that had previously been left to the medical profession; people have gone further with the result that we have had committees on the cost of medical care with their many ramifications.

The Auxiliary should urge every member to inform herself thoroughly and intelligently concerning these questions so vital to her husband's profession. It is no longer permissible to be ignorant of important problems. The typical Auxiliary member desires to know the truth about matters which concern medicine. This is never an unpleasant task, this acquiring information, this self education.

The next step after self education is the education of the public. Equipped with the facts, the doctor's wife is able to pass this information on to others. In this respect the educational and public relations committee go hand in hand. Every member of the Auxiliary belongs to various lay organizations, Parent Teachers Associations, Federated clubs and Church groups. Every social contact affords one more opportunity for disseminating factual information concerning the medical profession.

Things a doctor could never bring himself to say can be said by the Auxiliary member with perfect propriety; defense of the medical profession against unjust attacks will come from her without any violation of the ethics of the profession, and many telling blows can she deal the enemy. The Auxiliary member is in a position to promote the work of the Health Department or the local medical society in furthering the work of educating the public in health matters. This concerted and cooperating effort cannot help but bring results and work to the advantage of both the physician and the public.

Organized medicine in North Carolina is growing in influence and accomplishments along many lines of endeavor through the medium of the enthusiastic application of progressive medical, surgical and public health procedures, and by and with your continued cooperation and assistance the public and our profession have an encouraging medical future.

References: Mrs. Robert E. Fitzgerald, Wauwatoso, Wis.

PRESIDENT'S REPORT

Mrs. J. R. Terry, Lexington, N. C.

As President of the Auxiliary to the Medical Society of the State of North Carolina it is my pleasure and privilege to present a summary of the work done during the year.

You have heard the report of the Organization Chairman. The reports from our ten Councillors are most gratifying. It shows enthusiasm and interest. Through their efforts we are growing in number and usefulness. We are delighted to have two new Auxiliaries. One is the seventh district

which was organized last fall, the other, our youngest and newest, is our hostess Auxiliary organized here in the Twin City April 13, 1937, and may I pause here to recall on April 17, 1923, our State Auxiliary was organized in Asheville, N. C.

Our Loan Fund is growing steadily and we are glad to report two new loans this year. It ought to be a source of satisfaction to every member of our Auxiliary to know there is such a fund for the ambitious daughters of our doctors who have drawn on the family purse for four years and are anxious to do post-graduate work but are too considerate and proud to accept more from their family.

Our McCain Bed Fund is in excellent shape. It has been our pleasure to have two guests this year. The young lady who occupied the bed until recently is now being cared for by her home county and a seventeen-year-old boy is our guest and we are delighted with the progress he is making toward recovery. To have a part in such a worthwhile and fitting objective more than justifies our organization and ought to spur us on to a larger membership and a desire to leave a song in someone's heart.

Hygeia, the excellent journal published for the laymen by the American Medical Association, has a chairman who has worked tirelessly this year to bring our subscriptions up to our quota but through lack of cooperation by the majority of our members we are far from our goal. Our women object to canvassing for subscriptions to magazines and thereby lose sight of the fact that each subscription secured will pay for a day and a half in our McCain Bed through *Hygeia.* We can direct public thinking and actions and extend the aims of the medical profession to other organizations. We would like to commend our *Hygeia* chairman for volunteering to accept subscriptions to any publications and donate all commissions to our McCain Bed Endowment Fund. In this way we can all help by sending her our own subscriptions and renewals and those of any friends who might be interested.

We are proud of our Treasurer's report. All bills are paid and we have a comfortable bank account.

We have had two Board meetings this year. In October we met with Mrs. McCain at her home in Sanatorium. The seventeen members present enjoyed a lovely luncheon and a social hour before our regular business session. The spring meeting was held in the home of your president in Lexington on March 24 with twenty-four guests present, thirteen being members of the Executive Board.

The five dollars offered by Mrs. Sidbury to the district securing the greatest number of members was won by the fourth district and presented to the McCain Bed Endowment Fund and the five dollars offered by Mrs. McCain to the district securing the largest amount of money for the McCain Bed Fund was won by the eighth district and also presented to the McCain Bed Endowment Fund.

We, the wives of the physicians of North Carolina have a duty to perform. We are threatened by state medicine and various medical cults are using every effort through political influence to exploit the public and it well behooves us to keep informed so we can speak with authority when the opportunity presents itself. Do not hesitate to serve on committees of your clubs and parent-teacher associations where the wives of physicians can render the proper service. These clubs and associations have strong legislative influence and in this way you may be instrumental in bringing about legislation that will not be hostile toward the medical profession.

In closing I wish to express my thanks and appreciation to every Auxiliary member and especially the Executive Board for their loyal cooperation.

Respectfully submitted,

Mrs. J. R. Terry

JANE TODD CRAWFORD MEMORIAL

The men of the Southern Medical Society are very anxious that we should go forward with the Jane Todd Crawford Memorial as a project.

Have you presented the facts concerning the Jane Todd Crawford Memorial to your district membership? Have you had programs on this subject? Are there members *in your district* who have not heard the story of Jane Todd Crawford and her heroism? There is an excellent report of her life in the minutes of the State Medical Society for 1933 on page 522. Won't you try to get your membership informed so that they may become conversant with the heroism of this wonderful woman?

Any contribution from your district toward a Jane Todd Crawford Memorial please send to me so that I may send it to the Treasurer of the Southern Medical Society at an early date.

A collection taken at the Convention netted twenty-five dollars.

Thanking you, I am

Yours sincerely,

Mrs. R. S. McGeachy, *State Chairman,*
Jane Todd Crawford Memorial Committee.

HISTORICAL REPORT OF AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Name of State organization: Auxiliary to the Medical Society of the State of North Carolina.

Organized April 18, 1923, in Asheville, N. C., with Mrs. Paul P. McCain of Sanatorium acting as Organization Chairman, and at this meeting elected first president of the Auxiliary.

The enthusiastic and energetic leadership of the President, Mrs. J. R. Terry, and the splendid cooperation of her associate officers and chairmen

have been great factors in the maintenance and growth of the State Auxiliary during the past year.

In addition to the present officers, much credit for growth and expansion should go to the pioneers and former leaders who laid the foundational structure of organization, projects and program.

OFFICERS FOR 1936-37

President—Mrs. J. R. Terry.....Lexington, N. C.
President-elect—Mrs. W. T. Rainey.....Fayetteville, N. C.
First Vice-President—Mrs. C. P. Eldridge.....Raleigh, N. C.
Second Vice-President—Mrs. J. B. Sidbury.....Wilmington, N. C.
Third Vice-President—Mrs. Roscoe McMillan.....Red Springs, N. C.
Chairman of Past Presidents—Mrs. P. P. McCain.....Sanatorium, N. C.
Recording Secretary—Mrs. E. C. Judd.....Raleigh, N. C.
Corresponding Secretary—Mrs. J. R. Hege.....Winston-Salem, N. C.
Treasurer—Mrs. Fred R. Taylor.....High Point, N. C.

These officers were installed by Mrs. McCain at State meeting in Asheville.

Advisory Board is composed of:

Dr. V. S. Caviness, Chairman.....Raleigh, N. C.
Dr. W. T. Rainey.....Fayetteville, N. C.
Dr. I. T. Mann.....High Point, N. C.

The State is divided into ten councillor districts, each having an alert councillor. The reports of the councillors are given in the report of organization chairman. There has been an increased interest in activities in councillor districts during the past year.

The Councillors are:

First District—Mrs. T. L. Carter.....Gatesville, N. C.
Second District—Mrs. E. B. Beasley.....Fountain, N. C.
Third District—Mrs. G. B. Barefoot.....Wilmington, N. C.
Fourth District—Mrs. C. F. Strosnider.....Goldsboro, N. C.
Fifth District—Mrs. R. A. Matthewson.....Raeford, N. C.
Sixth District—Mrs. Sidney Smith.....Raleigh, N. C.
Seventh District—Mrs. F. M. Houser.....Cherryville, N. C.
Eighth District—Mrs. W. P. Knight.....Greensboro, N. C.
Ninth District—Mrs. C. R. Hedrick.....Lenoir, N. C.
Tenth District—Mrs. W. C. Johnston.....Canton, N. C.

The organization "set-up" with its president, president-elect, chairman of past presidents, who is our Mrs. P. P. McCain (known as organizing president, because she was the instigator and organizer of our Medical Auxiliary fourteen years ago in Asheville), first vice-president (which is not an elective office but one filled automatically by the outgoing presi-

dent) acting as chairman of organization, second vice-president and chairman of McCain Bed, third vice-president and chairman of Loan Fund, simplifies the matter of reports and responsibility.

NAMES AND DUTIES OF CHAIRMEN

Chairman of Organization—Mrs. C. P. Eldridge, Raleigh.

To have direct charge of work of councillors and in every way further the work of organization.

Chairman of Bed—Mrs. J. B. Sidbury, Wilmington.

To have charge of McCain Bed at Sanatorium, to raise funds for upkeep, the expansion of endowment fund, to approve selection of occupant, and all bills pertaining to bed. Marie Lowe has been occupant of bed since Dr. Johnson's dismissal, until a recent date, when her county took her over. Henry Steegal, a 17-year-old boy from Oxford, N. C., was suggested as next occupant. A balance of $316.83 in Bed Fund treasury reported.

Chairman of Loan Fund—Mrs. Roscoe McMillan, Red Springs.

To be in charge of fund created for purpose of making loans to children of North Carolina doctors who could not otherwise finish their college education. To raise funds for this project and with consent of Finance Committee approve all applicants for loans. Reports loan to five girls for education. Balance of $381.60 in Loan Fund treasury.

Chairman of Hygeia—Mrs. Paul Yoder, Winston-Salem.

To promote use of *Hygeia* by increasing circulation and urge doctors and others to subscribe through Auxiliary. Mrs. Yoder reported *Hygeia* on good basis and twenty-three subscriptions secured to date (March 24th).

Chairman of Research—Mrs. G. M. Cooper, Raleigh.

To gather data concerning organization, activities, etc., in medical circles and reviews of papers and books which might be interesting and helpful for programs.

Publicity Chairman—Mrs. J. R. Hege, Winston-Salem.

To give out all public information concerning activities of Auxiliary and keep members and public informed through the press, bulletins, radio, etc.

Scrap Book Chairman—Mrs. C. D. Thomas, Sanatorium.

To collect and place in book all newspaper clippings, bulletin or other material pertaining to activities of Auxiliary.

Memorial Chairman—Mrs. I. H. Manning, Chapel Hill.

Secure list of deceased members and conduct brief memorial service at State Convention as a tribute to their memory. Deaths were noted at Spring Board meeting: Mrs. J. W. Richardson of Greensboro, Mrs. Charles Phillips of Thomasville, Mrs. J. C. Grady, Kenly, Mrs. Chas. O'H. Laughinghouse.

Chairman of Public Relations—Mrs. John D. Robinson, Wallace.

To contact and cooperate with other organizations in health programs and campaigns. Mrs. Robinson conducted a successful radio program over WPTF, Raleigh. A fifteen-minute talk was made once a month for three months. The talks proved so interesting the State Board of Health printed them in their *Bulletin*.

Two Board meetings were held during the year. The fall meeting was held October 20, 1936, in the home of Mrs. P. P. McCain, at Sanatorium.

A prize offered the district securing the greatest number of paid-up members was reported won by the fourth district and was presented to McCain Bed Endowment Fund.

A second prize, offered for the largest donation to the McCain Bed Fund, was won by the eighth district, and this was also given to the McCain Bed Endowment Fund.

The Board voted to send four delegates, Mrs. C. F. Strosnider, Mrs. G. M. Cooper, Mrs. J. B. Sidbury, and Mrs. Roscoe McMillan to Southern Medical Convention in Baltimore, Nov. 17-20, 1936.

The Executive Board held its Spring meeting Wednesday, March 24, 1937, with Mrs. J. R. Terry at her home in Lexington with thirteen board members and eleven Lexington Auxiliary members present.

Reports were given from councillors.

Mrs. McMillan, in her report of Southern Medical meeting held in Baltimore, stated that the State Auxiliary was voted a part of the Southern and that we no longer had to pay dues to it.

Mrs. Fred Taylor reported balance on hand in general fund, $188.64.

Plans for the State meeting to be held in Winston-Salem were discussed and completed. Mrs. Wingate Johnson of Winston-Salem consented to give the welcoming address, Dr. Cunningham, pastor of First Presbyterian Church, the invocation, and Mrs. J. A. Keiger, the response.

The Board voted to have the history of the bed fund read at the State meeting by Mrs. Sidbury, and the history of the loan fund by Mrs. McMillan.

Mrs. Paul McCain suggested that a committee be appointed to work out suggested programs for local Auxiliary meetings.

Mrs. Terry appointed a nominating committee composed of the following: Mrs. J. B. Sidbury, Mrs. Erick Bell, Mrs. W. P. McKay, Mrs. A. K. Maness, and Mrs. Julian Moore.

Respectfully,

Mrs. Erick Bell, *Historian*.

REPORT OF HISTORIAN

Mailed in October, historical report to the Historian of the Woman's Auxiliary to the Southern Medical Association.

In March report for 1935-36 up to January 1937 was sent to Historian of the Woman's Auxiliary to the American Medical Association.

This report included roster of State officers for 1935-36 and 1936-37, organization set-up, reports of various committees, and Mrs. Elridge's summary of work done during 1935-36.

Three copies of history made. A copy sent to Mrs. Terry, President; Mrs. Thomas, Scrap Book Chairman; the third to be given to successor of present historian.

Respectfully submitted,

MRS. ERICK BELL, *Historian.*

BRIEF OUTLINE OF WORK OF DOCTORS WOOD AND LEWIS

By MRS. G. M. COOPER

The people of North Carolina owe a great debt to Doctors Wood and Lewis. Dr. Wood was in the prime of life enjoying a large medical practice in Wilmington and was editing a medical journal. In the early '70's, Dr. Wood began to form in his own mind the possibilities of public health work. He succeeded, with the aid of some other physicians, in getting a law finally enacted by the Legislature of North Carolina on February 12, 1877, establishing the State Board of Health. Our Board was the twelfth State Board of Health to be established in the United States. Dr. Wood was later made the first State Health Officer. He served, of course, without pay, as the total appropriation by the Legislature was only $100.00 a year. Dr. Wood served until his death on August 22, 1892, therefore serving about fifteen years.

Following the death of Dr. Wood, the Board elected Dr. Richard H. Lewis of Raleigh on September 7 of the same year. The appropriation had been increased to $2,000 a year. Dr. Lewis was a man of broad vision, in fact, a medical statesman. He expanded the work so ably commenced by Dr. Wood. Dr. Lewis soon undertook to create sufficient support in the medical profession and among the people of the state for a whole time State Health Officer. Dr. Lewis, out of the $2,000 a year appropriation for his department, continued publication of the *Health Bulletin* started by Dr. Wood, employed a full time stenographer, and issued a considerable number of special pamphlets on such items as water and sewage, etc.

Dr. Lewis succeeded in getting the Legislature of 1909 to make sufficient appropriation for the establishment of full time State health work, the appropriation that year being increased up to $10,500. Dr. Lewis succeeded in getting the Legislature to do this by the insistence that he did not want the office on a whole time basis and that he wanted to retire in favor of a trained young man, so on July 1, 1909, after Dr. Lewis had served for seventeen years, lacking just a few weeks, he retired, and Dr. W. S. Rankin was selected by the Board upon Dr. Lewis' recommendation to become the first whole time health officer the State ever had and to begin office on July 1, 1909.

It is not too much to say that the foundation of health work in North Carolina was laid by Dr. Thomas Fanning Wood and Dr. Richard H. Lewis.

REPORT OF COURTESY COMMITTEE

From our State Presidents, both incoming and outgoing, from our officers and members and visitors, we, the Courtesy Committee, bring heartfelt thanks to the doctors' wives of Winston-Salem for your untiring efforts to make our stay both profitable and happy.

Well we remember five years ago this spring the delightful time we had with you, and the saying we never stand still, but either go backward or forward, holds true in this instance. For, you have gone forward, in that your plans for our pleasure are perfect. First, our place of meeting is ideal, and made more beautiful by the gorgeous flowers—and from the boxes I've seen being handed around, I have an idea that our officers are going to be made more beautiful by flowers.

The lovely party of last night, the wonderful prizes, who wouldn't have loved it all? The luncheons, bridge, tea, and lovely drives were most delightful.

But above all, your cordial welcome and warm friendliness stands out.

For all of which, we thank you.

Respectfully submitted,
(Mrs. W. P.) Nell H. Knight, *Chairman.*

REPORT OF THE NOMINATING COMMITTEE

President—Mrs. W. T. Rainey.....Fayetteville
President-elect—Mrs. J. A. Elliott.....Charlotte
First Vice-President—Mrs. J. R. Terry.....Lexington
Second Vice-President—Mrs. J. Buren Sidbury.....Wilmington
Third Vice-President—Mrs. J. A. Keiger.....Greensboro
Recording Secretary—Mrs. George K. Mitchell.....Wilson
Treasurer—Mrs. E. C. Judd.....Raleigh
Chairman Board of Past Presidents—Mrs. P. P. McCain .....Sanatorium

Mrs. Erick Bell,
Mrs. A. K. Maness,
Mrs. Julian A. Moore,
Mrs. W. P. McKay,
Mrs. J. Buren Sidbury, *Chairman.*

CONVENTION MINUTES OF THE AUXILIARY

The Fifteenth Annual Meeting of the Auxiliary to the North Carolina Medical Society met in the roof garden of the Robert E. Lee Hotel, Winston-Salem, Tuesday, May 4, at eleven o'clock.

The meeting was called to order by the President, Mrs. J. R. Terry.

Dr. John R. Cunningham, Pastor First Presbyterian Church, opened the meeting with prayer.

Greetings of welcome were extended by Mrs. Wingate M. Johnson of Winston-Salem. The response was given by Mrs. James A. Keiger of Greensboro.

A most impressive memorial service was conducted by Mrs. Isaac H. Manning of Chapel Hill.

The reading of the minutes was dispensed with, since they are published in this years TRANSACTIONS

The treasurer's report was read by Mrs. Fred R. Taylor, High Point. This report was accepted with a rising vote of thanks.

Dr. C. F. Strosnider, State Medical Society President, brought greetings to the Auxiliary.

The following made reports:

Mrs. Fred R. Taylor read Mrs. J. B. Sidbury's Bed Fund report.
Mrs. Fred R. Taylor read Mrs. R. D. McMillan's Loan Fund report.
Mrs. Paul A. Yoder, *Hygeia* Chairman.
Mrs. C. D. Thomas, Scrap Book Chairman.
Mrs. R. S. McGeachy, Jane Todd Crawford Chairman.
Mrs. G. M. Cooper, Research.
Mrs. Erick Bell, Historian.
Mrs. G. B. Barefoot, Third District, Councillor.
Mrs. C. F. Strosnider, Fourth District, Councillor.
Mrs. P. P. McCain, Fifth District, Councillor (pro tem).
Mrs. Sidney Smith, Sixth District, Councillor.
Mrs. F. M. Houser, Seventh District, Councillor.
Mrs. W. P. Knight, Eighth District, Councillor.
Mrs. C. R. Hedrick, Ninth District, Councillor.
Mrs. J. R. Hege, Corresponding Secretary.
Mrs. E. Clarence Judd, Recording Secretary.

Mrs. I. H. Manning made a motion, which was seconded and carried, to send a telegram of sympathy to Mrs. W. B. Murphy, whose husband had just passed away.

Dr. J. S. Johnson, who occupied the McCain bed in the Sanatorium for several months but is now well and practicing, made a gift of $350 to the McCain Bed Endowment Fund.

A collection was taken and twenty-five dollars raised for the Jane Todd Crawford Memorial Fund.

The following were elected delegates and alternates to the meeting of the American Medical Association: Mrs. Wingate M. Johnson, Winston-Salem; Mrs. W. G. Suiter, Weldon; Mrs. M. L. Stevens, Asheville; Mrs. Reid Patterson, Charlotte.

In the absence of Mrs. J. B. Sidbury, the Chairman of the Nominating Committee, Mrs. Julian A. Moore, gave the following report which was accepted:

President—Mrs. W. T. Rainey.....Fayetteville
President-elect—Mrs. J. A. Elliott.....Charlotte
First Vice-President—Mrs. J. R. Terry.....Lexington
Second Vice-President—Mrs. J. Buren Sidbury.....Wilmington
Third Vice-President—Mrs. J. A. Keiger.....Greensboro
Recording Secretary—Mrs. George K. Mitchell.....Wilson
Treasurer—Mrs. E. Clarence Judd.....Raleigh
Corresponding Secretary .....
Chairman Board of Past Presidents—Mrs. P. P. McCain.....Sanatorium

The new officers were inducted into office with a most appropriate ceremony by Mrs. P. P. McCain. A rising vote of thanks was given the retiring President, Mrs. J. R. Terry, and her co-workers.

The new President, Mrs. W. T. Rainey, then took the chair and announced that she will call a meeting of her Executive Board after she has appointed Chairman of Standing Committee.

There being no further business, the meeting was declared adjourned.

Respectfully submitted,

MARY P. JUDD (MRS. E. CLARENCE JUDD),
Recording Secretary.

PROCEEDINGS

Twenty-Seventh Annual Session

OF THE

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

President
Dr. R. M. Buie

Secretary-Treasurer
Dr. A. H. Elliott

ROBERT E. LEE HOTEL
WINSTON-SALEM, N. C.
MAY 3, 1937

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

MONDAY MORNING SESSION

May 3, 1937

The meeting of the North Carolina Public Health Association convened at ten o'clock in the Ball Room of the Robert E. Lee Hotel, Winston-Salem, North Carolina, Dr. R. M. Buie, President of the Association, presiding.

President Buie: The Twenty-Seventh Annual Meeting of the North Carolina Public Health Association will now come to order.

Let us all stand. We will ask Dr. Ralph A. Herring, Pastor of the First Baptist Church, Winston-Salem, to give the invocation.

Dr. Ralph A. Herring: Our Father, in Heaven, we thank Thee for this opportunity at the beginning of this session to acknowledge Thy presence in prayer. Not one of us but as we face our problems individually realizes our need of Thee. We come to ask Thy presence and a sense of Divine guidance in the discussion of our work. We come to offer Thee our thanks for these men and women whose lives are devoted to the ministry of healing. We thank Thee for their training. We thank Thee for their willingness to sacrifice. We thank Thee for that which they have accomplished in our state and community, in the intervention of disease and all the good that has been done.

And, Our Father, we ask Thy blessings upon them in their deliberations and that Thou shalt strengthen their lives and direct them in all that they undertake. Be with us each one, we humbly pray, for Christ's sake. *Amen.*

Secretary Elliot: The next part of our program will be the President's Address, by Dr. Buie.

. . . President Buie presented his prepared address. . . (Applause)

Members of the North Carolina Public Health Association and Guests:

It is with a deep feeling of pleasure that I preside at this meeting today, and stand before you as president, of this great organization of Public Health Workers of North Carolina. I want to express my deep appreciation of the honor you conferred on me last May. I felt my unworthiness then and even more so now, for I have done nothing to merit the honor of President. Dr. A. H. Elliott, our very efficient secretary, has done all the work. I wish to thank him for his efforts. We both express our thanks to those who so readily agreed after receiving letters from Dr. Elliott inviting them to prepare and read papers here today. I believe we have a very fine program.

Lacking originality to write anything of interest, I thought it would be well to review briefly Health Work in North Carolina. I will endeavor to point out some of the achievements of Health Work and state a few of the things in my opinion we should stress and give more thought.

Let us take a walk down the road of memory and trace the growth of organized Public Health Work in North Carolina, how it commenced and what influences caused its growth and expansion and by what agencies the betterment of conditions has been effected: with the hope that looking on our work from a historical point of view we may appreciate what has been done and in the future profit by the experiences of the past. At the same time we should bear in mind our future policies should be influenced not only by our own experiences but by the experiences and work of others who have to deal with similar problems.

The North Carolina State Board of Health was established through the foresight and untiring efforts of Dr. Thomas F. Wood of Wilmington, N. C., who had the distinction of being the first secretary and was elected in 1879. Dr. Wood died in 1882 and was succeeded by Dr. Richard H. Lewis of Raleigh, N. C. Both of these were very able men and stood at the top of the medical profession in North Carolina.

The first educational pamphlet was issued by the Board of Health in 1878, the subject: "The Timely Aid for the Drowned and Suffocated." *The State Health Bulletin* made its first appearance in April, 1886, edited by Dr. Richard H. Lewis of Raleigh, N. C.

In 1894 Drs. Albert Anderson and W. T. Pate were elected bacteriologists for the Board. The State Laboratory of Hygiene was established in 1905. In 1906, the N. C. State Association for the Study and Prevention of Tuberculosis was organized and in 1907 the State Sanatorium was founded. In 1908 Dr. C. A. Shore became Director of the State Laboratory of Hygiene. In 1909 the General Assembly provided for a whole time State Health Officer, at which time Dr. Richard H. Lewis resigned as Secretary to the Board and Dr. W. S. Rankin was elected as his successor, taking charge of the work on July 1, 1909, with an appropriation of $10,500.00. Dr. John A. Ferrell was selected in February 1910 as assistant director for hookworm eradication. County Boards of Health were established in 1911. The Vital Statistics Law was passed in 1913 and the Bureau of County Health Work was established in 1915 with Dr. G. M. Cooper as director.

In 1915 the General Assembly made the State Vital Statistics Law conform to national model by requiring burial permits in rural communities. Also the County Health units got a good start and over 52,000 people received three complete vaccinations against typhoid fever and medical inspections of schools was put on in six counties.

In 1916 North Carolina was admitted to the Registration Area for deaths.

In 1917 the General Assembly passed several important Acts: "An Act

to prevent and control the occurrence of certain infectious diseases in North Carolina." "An Act to provide for the physical examination of school children of the State at regular intervals." Act—"To prevent blindness in Infancy," an Act—"To provide for sanitary inspection and conduct of restaurants and hotels," an Act—"To regulate the treatment, handling and work of prisoners."

In 1918 the Bureau of Venereal Diseases, paid for by Federal appropriation, was established, with Dr. James A. Keiger as director. Also the Bureau of Medical Inspections of Schools, under the direction of Dr. G. M. Cooper, developed, and free dental clinics for the public schools was established. The Bureau also developed tonsil and adenoid clinics for the practical and economic treatment of public school children suffering from these defects. To my mind this was one of the finest pieces of work the Board has done.

Many other important health acts were enacted into law by the various General Assemblies. The Sanitary Engineering Department, under two able leaders, Messrs. W. H. Booker and H. E. Miller, has, and is still doing, splendid work in the fight against diseases. Other bureaus, too numerous to mention, have functioned down through the years. At times reorganization has been done, combining some of the bureaus under new names and leaders.

In 1936 a division of Industrial Hygiene was tentatively established. This resulted from an amendment to the compensation laws of the State by the General Assembly of 1935.

However, "The most important development in Public Health circles in many years for this section of the South is the establishment at Chapel Hill of a Department of Public Health in connection with the School of Medicine, and the selection of Dr. Milton J. Rosenau as its director. This development was made possible by the co-ordination of the staffs and the facilities of the North Carolina State Board of Health and the schools of medicine and engineering of the University of North Carolina."

"The new department, while an integral part of the University School of Medicine, with Dr. C. S. Mangum, Dean, is under the personal direction of Dr. Rosenau. Dr. Rosenau is regarded as America's foremost authority on Public Health. Until his retirement recently from that faculty he had been head of the famous Harvard School of Public Health for many years."

"For a long time the officials of the State Board of Health have worked hard to secure the establishment of such a school. The necessity for it has been apparent to all responsible health workers. It was here in this building, in 1932, that Dr. J. H. Epperson of Durham, in his presidential address, stated 'Somewhat with fear and trembling, I now propose to present a matter which is not new by any means to many of this group. The proposal is to establish a School of Public Health with some of our institutions of higher learning.' " This vision of Dr. Epperson and others

is now a reality. The chief credit for success in launching the enterprise should go to Dr. Charles S. Mangum, Dean of the University Medical School, and Dr. Carl V. Reynolds, State Health Officer. Both of these officials have worked hard and cooperated with each other in every way in overcoming all difficulties in the way of establishing the new department. In their opinion the development was in part made possible by the success of the course put on in the school year of 1934 and 1935 at the University under the auspices of the School of Public Administration. The work was so well done that it received recognition from the U. S. Public Health Association, which assigned several of its applicants for post-graduate work to take the second course. It is the hope and belief of all members of this organization that this enterprise under Dr. Rosenau's direction will expand into one of the most important departments of Public Health Education in the entire country. The need for special training for physicians who want to enter public health work is great.

Up to a few years ago most health officers came from private practice and sanitarians from the laity without any or only a little public health training. Public health procedure as practiced today is a most complex thing. Physicians, dentists, bacteriologists, sanitarians, nurses, veterinarians, statisticians, and other scientifically trained personnel, all grouped together for a common cause, the prevention of disease.

This observation leads me to say that with the higher entrance requirements to enter medical schools and then special training in public health work, no properly trained, competent health officer should receive a salary less than $5,000.00 per year.

The State Board of Health continued to grow and expand from year to year, with the establishment of various other bureaus as its duties were increased and its powers broadened. In 1877 it had an appropriation of $100.00. Dr. W. S. Rankin took charge in 1909 with a budget of $10,500.00. The remarkable progress made by the State Health Department from 1909 to 1925 was due largely to the extraordinary energy, genius for organization and administrative ability of Dr. Rankin. Rural health work expanded rapidly under his administration, and North Carolina soon was looked upon as the most progressive state in matters of public health. It is of particular interest to know that Guilford County, North Carolina, in 1911 appropriated money and established the first whole time County Health Department in this country, with Dr. Floyd Ross as health officer. The State budget in 1925 was $455,000.00 and thirty-five whole time County Health Departments. Dr. Rankin resigned in 1925.

Dr. Charles O'H. Laughinghouse was later elected Health Officer and in 1929 the expenditures of the Board of Health work that year reached the highest peak in the history of the Board, totaling $486,000.00. Dr. Laughinghouse died in 1930.

In 1931 Dr. James Parrot was elected Health Officer. He took over the direction of the work of the State Board of Health in one of the dark-

est hours in the history of the Board. The State and Nation were undergoing a disastrous financial crisis. County Health Departments were in some instances abolished, all suffered drastic cuts in budget and personnel. The State budget was unmercifully cut. Dr. Parrot brought to the Board a fresh outlook, a breadth of vision that served notice to all that we had an able and resourceful leader. His death in 1934 was a severe blow to the entire State. Also in 1933 the death of Dr. C. A. Shore was a severe loss to the State Health Department.

Final and fitting tribute at other places and times have been paid to these men. But I want to say this, the State and this organization have suffered a severe loss in their passing. Life has taught us this bitter lesson, that no man is indispensable. Soon or late the world must get on without us. But these three more nearly approached indispensability than anyone among us. From their tirelessness, their devotion, their intelligence, their balance, their thoroughness, their integrity we all derived inspiration.

Dr. Carl V. Reynolds became our leader in November, 1934. Dr. Reynolds has carried on where Dr. Parrott left off. All of us know what he has done in promoting and establishing the Training School at Chapel Hill. County health work has expanded. At this writing there is some form of whole time health work in operation in seventy-one counties. One of the chief efforts of the State Board of Health is to establish a whole time Health Department in the remainder of the twenty-nine counties this year.

Rural health work has been likened to the spoke of a great wheel, possessed with scientific knowledge, traveling through the rural areas applying the principles of preventive medicine among those individuals who are to a certain extent deprived of medical services and protection against the ravages of disease in endemic and epidemic form. The hub of the wheel is the State Board of Health, which acts as a pivot to these functioning organizations cooperating and co-ordinating in an advisory capacity and by means of financial aid. Through the analysis of the results accomplished by these rural departments various other agencies in the public health work have supported the rural Health Departments, deeming it the best means of accomplishing their primary objects. Such organizations are the United States Public Health Service, the National Tuberculosis Association, the National Child Health Council, and the recent Social Security funds.

What has been the result of all of this expenditure of money, work and talent? Hookworm and typhoid fever infections have been greatly reduced. There were 18 deaths of typhoid fever in North Carolina in 1936 as compared to over 800 deaths in 1914. Diphtheria, tuberculosis, malaria, maternity and infancy mortality has been greatly reduced. Smallpox is practically a disease of the past. We should eradicate typhoid fever and diphtheria as completely as we have smallpox.

However, there has been an increase in the degenerative diseases. Now with the work being done by the Division of Industrial Hygiene many

health hazards should be removed from our great industrial plants and in time a decrease in the degenerative diseases.

Statistics show an increase in social diseases. Heretofore, problems relating to the control of syphilis and gonorrhea have offered a challenge which the medical profession and especially health officers have not accepted and to which only partial recognition has been given. I made the statement ten years ago at a meeting of this association, that venereal diseases was the most serious public health menace of the day, and that we were doing very little about it. I make the same statement today—except to say we are doing something about it. Much progress can be made to control the perpetual epidemic of syphilis during the next few years if modern scientific medical knowledge is accurately applied. The educational programs through the daily press, magazines, over the radio, and many conferences on the subject. Inaugurated by the Surgeon General of the United States and carried on by our own State Health Department, City and County Health Departments, have so aroused the public that an effective anti-venereal campaign should be carried on.

I wish to make the following observations and opinions:

1. I heartily endorse the anti-syphilis campaign being planned by our State Health Department.

2. I would advocate a plan whereby remedial defects in indigent cases could be corrected. I believe I am conservative in saying that not more than 33 1/3 per cent of our population receive adequate medical treatment. This is not the fault of the doctors. Most doctors are willing to give service without pay when called upon to do so, but the physician does not seek the patient, the patient must seek the doctor. People may be kept from seeking the doctor by ignorance, prejudice, lack of money, fear of debt, or a dislike of charity.

3. Health workers are so interested in the physical health of the school child that the mental side is overlooked. A sound mind in a crippled body is much to be preferred to a crippled mind in a sound body. More thought and study should be given to the mental development of the child.

4. More study should be given to our mental cases. Ways of preventing mental defectives and better facilities for the care of those we have. Sometime ago in trying to get an idiotic child into a State institution, I was told that there were no means at present to care for her. Also was told that a recent survey showed there were 3,000 idiots in North Carolina. The child I was interested in was being cared for by a woman, in addition to being a syphilitic, was the mother of six illegitimate children. Idiot and all were cared for by the Welfare Department. Such cases as these and many others which we contact make us more and more in favor of birth control. Often the County Health Officer sees cases where the grandfather and grandmother are in the County Home. The mother and father on the Welfare. The grandchildren on the chain gang as soon as they get old enough.

5. Sixty-five insane cases spent 685 days in our county jail during 1936, before they could be disposed of. This is a sad commentary on our State. We should do everything in our power to correct this terrible wrong.

6. I wish to urge the expansion of County Health work, and particularly emphasize better rural sanitation.

7. We should intensify our maternity and infancy work, have more baby and crippled children clinics, also intensify our work on tuberculosis and pellagra.

8. We should push malaria control and investigation. Especially we should be more alert in the Piedmont area as so much of the water has been impounded by municipalities for public use and private citizens and clubs have built lakes and fish ponds. There is more malaria in this area than we think.

9. Last but not least, have better qualified midwives. However, I would prefer none at all.

In conclusion I will say that the public has been for years the beneficiaries of our State Health Department; its blessings, like the life-giving dew of Heaven, have fallen on all, the just and the unjust, the appreciative and the unappreciative. This address has no scientific value. If I have dealt in personalities it is from a desire to show my deep appreciation and sincerity to our State Health Department and its personnel.

R. M. Buie, M.D.,
President N. C. P. H. A., Guilford County Health Officer.

President Buie: Dr. Sisk was to have talked to us next, but he and Dr. Branch have agreed to swap places, as Dr. Knox, who is to discuss Dr. Sisks's paper, has not arrived as yet.

So we will now hear from Dr. Branch on "Follow-up Material in Mouth Health Education." Dr. Branch of the State Board of Health! (Applause)

Dr. Ernest Branch: Mr. President, nearly all you folks know about our health program, but in talking with some of you I find that you don't know all about it.

I don't know all about it, and I doubt if we will ever know all about it, but there are just a few points that I want to bring out this morning which I think we should know more about than we do.

We are told that in order to have a strong, healthy, robust group of children we should begin with the grandparents. I tell the groups to whom I speak that it is too late now, so far as they are concerned, but we are just in time, so far as their children's children are concerned.

Some of the things that I am going to say this morning we ought to have done ten years ago, but somehow they got by us until now.

Realizing that it is too late to begin with the grandmother, but that it is not too late so far as this new generation that is coming on is concerned,

the first attack we endeavor to make in our mouth health education program is with the mother, the expectant mother.

The first opportunity we have of finding she is pregnant is when it is reported about the third month of pregnancy, and that is the first time we contact her. We write her a letter. I am not going to read you all the letter, but I am going to read the first two or three words, and you will see the psychology that we have tried to incorporate in this introduction that we are making to her, trying to interest her in this one feature that we contend is the most important part of all health.

The letter opens, "You are thinking about and planning for your baby now."

If she is not thinking about it and planning for it I don't know who is. I believe she is. I just have the notion that that is the biggest thing on her mind at that particular time. Well, now, if it is, she certainly is in a receptive frame of mind for us to talk to her, and we proceed to talk to her in that first letter about the importance of caring for that baby. We tell her what she should do. We tell all expectant mothers that the first thing they should do when they find they are pregnant is to put themselves in the care of a competent physician and a good dentist—a competent physician and a good dentist. We don't pick them out for them. They are their own judges, and if they select a fellow across the swamp who pulls teeth with a pair of sharp pliers, that is up to them. If they select a poor man for their physician, we are sorry. But we tell them to select a competent physician and a good dentist.

When the baby is born, and the birth certificate comes in, we write her again. We try to tell her in different language the same identical thing we told her the first time we wrote her; that is, that she is responsible for the baby's teeth, and if she doesn't furnish the material for the baby's teeth and bone and other tissues of the child's body from her body—she has to furnish calcium and phorphorus from her bloodstream—and if the calcium and phosphorus from her bloodstream are reduced to a certain low ebb during the pregnancy, from then on the developing child is going to rob her own teeth and bone of material to make teeth and bone for itself. Naturally, she needs the care of a dentist, and she should again go to a dentist just as soon after the birth of the baby as possible to have her mouth rechecked. We are taking for granted she is under the care of a physician all the way through.

Then we get the child in school. We have found that children in school can't read ordinary type, the pica type that you and I read. They can't read that size type. They use a large type in school, in grammar grade work. So our follow-up material is written using that kind of type, primer type.

Here is the first thing we are doing. We are doing it just as the teachers of the first grades do it. We are trying to teach objects, and we are trying

to tie up the objects, particularly those that build teeth and bone. You find it in these sheets that we use in the school in the first grade.

In the second grade, we still stick to that type, but we try to connect the object and the name, just as the teacher in school does, but we are using objects that fit teeth and bone. The names are here and they transpose them under the object. Before that, the object name was under the object.

Now we go up to the third grade. We drop down to normal type. In the third grade, as you know, they are endeavoring to build sentences, and that is what we are doing. We are building sentences and in this particular case we use the tooth brush. In other words, I want you to know that what we are trying to do is to make the best of every opportunity we have to further health. In building these sentences, they tie in this tooth brush.

This first sentence here says, "I should brush my teeth to keep them .....," and they hunt through the bristles here, find the word "clean" and fill out the sentence.

When we get up to the fourth and fifth grades we get into stories. These stories certainly have to do with the mouth. That is my job, to see that the stories are built around the mouth.

In the fifth and sixth grades, we have gone still a step further.

In the seventh grade we do the same thing. Not only that, but we have gone through the library of the Standard Elementary School, and we have listed here every book in that library that has anything in the world in it that has to do with mouth health. That information is listed here—the name of the book and the page where the teacher can find this reference. If there is a teacher who likes to sit down, look at the moon and think about what might happen next Sunday, instead of hunting up the books, we help her. We have it all worked out. Anything in the world she wants to know about mouth health that is in the Standard Elementary School is listed here.

We have done the same thing for the Standard High School library. Not only that, but we have gone through and found everything there is available that we could borrow, buy or beg, which has to do with mouth health. We have that all listed, and we have the names and addresses of the folks who send that information to you free and those to whom you have to send a nickel in stamps to get it. In other words, we want to help them in every way in the world to tie that in, and get all that work out.

Then we come down to public literature. Most of you know about public literature. I want you folks all to know that this year in our mouth educational endeavor we have contacted through some one or more of our educational materials 700,000 children in the state. That is seven-tenths of the enrollment. So we are exposing them to it and are hoping that it will take.

Here is a letter that goes back to the children who write to Little Jack.

Somebody asked me about this letter the other day, and wanted to know if it didn't take a lot of postage. Yes, it takes lots of postage, but I want to ask you if you realize that, in writing to Little Jack, in the case of many of these children, that is the first piece of mail they ever address to anybody that goes through the post office. When Little Jack writes to them—and he writes to every one of them, Dr. Morris, if he can make out the addresses—and they receive that piece of mail from the post office addressed to them, it is the first piece of mail that some of those children ever received in all their lives.

And think whom it is from. It is from their State Board of Health. And think what it is about. It is about their own health. Can you think of a more valuable tie-up than that? My gracious alive, this is a long-time program, and some of those children to whom Jack is now writing are going to be members of the Legislature before we are through with this thing. Then, when we go down and talk to them we don't have to go into all the details, because they know all the details. We just have to talk about the big things.

This is the last thing we have gotten into—this newspaper. We have built up a news release service. These schools are publishing mimeographed newspapers, children-edited. They have their business managers and advertising managers and everybody else. These newspapers are gotten out on mimeograph machines. The children publish them. They are circulated throughout the schools.

That is a fine opportunity for us. We have contacted these newspapers throughout the state and suggested that we would be glad to send them releases. We will publish one on a piece of paper just exactly like the paper they use. If they have 750 copies of their paper, we will send them 750 sheets of this. They just reach over to our pile, put one in each copy of their paper, stick it together, and we have some more propaganda circulated.

They are glad to have this service, and we send out 26,500 of these sheets twice a month to the school newspapers of the state.

If you don't think that is propaganda, try again. You know, they tell me the definition of propaganda. Have you all heard that? The word came up in spelling. They were going to spell the word "propaganda" and give the definition. Finally somebody spelled it, but couldn't define it. A little red-haired boy down the line was just above to have the itch. The teacher said, "All right, Johnny."

He said, "The goose that laid the golden egg had the proper gander." (Laughter)

We have the "proper gander" and don't you think that we are not laying the golden egg. I will tell you what that golden egg is. The first thing that we are doing in this mouth health program is meeting the demands of society. Let us put all these four things down in our minds;

it took me a long time to study them up: It is meeting the demands of society that something be done for the unfortunate. This year we will have made the necessary dental corrections for 60,000 children in this state who could not have had it done otherwise.

Second, through our notice to parents of children who are amply able to have these corrections made, it is reminding thousands to go to their own dentists. Naturally, that tickles the dentists, because they are going to be paid for it.

Third, it is reducing the repeaters in our schools, and let me tell you that the taxpayers are finding it out. The appropriating bodies are finding it out. These county auditors know it, and they are glad to see us come.

Fourth, it is promoting public health because it is teaching these children the fundamentals of prevention. It is the golden egg. Let us keep the goose alive and let us see that the propaganda doesn't die. (Applause)

President Buie: I want to extend the courtesy of the floor to our visitors. We will be glad to have them take part in the discussion. I see Dr. John A. Ferrell of the United States Public Health Service. Doctor, we are mighty glad to have you with us, and any discussion you care to enter into you are welcome to do so.

The discussion on Dr. Branch's paper will be opened by Dr. Armstrong.

Dr. C. W. Armstrong (Salisbury): I have been associated in this work with Dr. Branch, I believe, as long as any man present in the audience. In fact, I think that probably our Health Department in Rowan County has been doing this dental work longer than any other Health Department in the state. It was started by Dr. Jack Warren in 1918, whom Dr. Ferrell will recall very pleasantly. He is associated with Dr. Ferrell now in New York City. He established in our county the first dental clinic operated in North Carolina. Dr. Branch, of course, was not with the State Board of Health at that time, but as soon as he did come on with the State Board of Health, he tried to tie in with him and has been very pleasantly associated with him ever since.

Dr. Branch's enthusiasm, his belief in what he has to sell, is putting the idea over in North Carolina. He has given us in health work in this State something to think about. He is putting us to shame, really, in selling his dental work. He is really showing us up in selling the other part of the health work. He is the most enthusiastic man, the most hard-working man, and the most diplomatic man I ever worked with in my life.

I recall one time he came to Rowan County and went out to see a county public health commissioner to talk to him about an appropriation for dental work. This man was an ardent fisherman and showed us his fishing tackle and so forth. Finally, when he got around to dental work, he said, "I believe it was the first President of the United States who stressed the importance of dental work. What was his name? Thomas Jefferson, wasn't it?"

Dr. Branch said, "I think that is right." (Laughter) He went ahead and sold this county commissioner on the importance of county dental work.

I recall another time he was in Rowan County. Colonel Boyden was chairman of the School Board at Salisbury at that time. Dr. Branch made a talk to the School Board, asking for an appropriation to put on some dental work. He had secured from the Superintendent of Schools before he started his talk the number of children who had been absent from school during that year, and he gave those figures. Colonel Boyden sat there taking it all in, listening very intently. Dr. Branch told them that so many children had missed school that year. Then Colonel Boyden said, "And every damn one of them had a toothache." So Dr. Branch got his dental program. (Laughter)

That is how he puts things over, and not only is he putting over his dental work, but he is certainly helping us in our public health work in other ways.

Long ago, when this work first started, the idea was to go out and fill a few teeth, pull a few teeth and let it go at that. Dr. Branch and his staff have realized that they are not getting the milk of the cocoanut that way, that we must prevent these decayed teeth, and the results which come from abscesses and that sort of thing, must prevent it happening. So he has started with an education program here, which is going to do far more good than the corrective work that he has been doing.

I know that most of you have had these contacts with Doctor Branch and I know that they have been good. There has never been a time in the many years that he has been coming into my department that he has failed in courtesy, that he has done anything that didn't tend to build up my department, rather than to tear it down. I feel that our association with him has been very, very pleasant, and I believe that we have all enjoyed very much his very instructive and helpful paper. (Applause)

President Buie: Is there any other discussion of Doctor Branch's paper? It is a very fine paper. We will be glad to have more discussion of it.

Dr. Armstrong: I hope, Mr. President, you will insist on some more discussion of Dr. Branch's paper.

President Buie: Most of us know what Dr. Branch is doing in the schools of North Carolina, and I feel that somebody ought to get up and say something about it.

Dr. Ennett, would you like to say something?

Dr. N. T. Ennett (Greenville): I would like to and I wouldn't like to. I feel that Dr. Branch is doing a wonderful piece of work in North Carolina. I don't feel equal to discussing the subject, however.

I might say that in Pitt County we have a white dentist and a colored dentist and for several months each year Dr. Branch gives them close

supervision. About a year or two ago he put on a public show that I am sure many of you here are familiar with. I followed that show very closely, and observed very carefully the results that were gotten, and I felt it was a wonderful piece of work. I don't know of any other phase of public health work that is being done any more effectively than the oral hygiene program put on by Dr. Branch.

President Buie: Is there any other discussion?

Dr. R. S. McGeachy (Weldon): Mr. President, I would like to ask one question. In our county we have one town where they examined all pre-school children. In one section where we examined forty children, there was not a child who didn't need dental work, not a single one of those pre-school children who wasn't urgently in need of dental work.

Out of about 140 or 150 in that town that we examined in those schools, there were only about twenty children that I found that didn't need some dental work. Unfortunately, we didn't have a dentist to examine them. I don't know but what if we had had, he would have made it one hundred per cent.

That was greater than I found in any other section of the county. I noticed in the papers sometime ago where some physician or some scientist or investigator had stated that he noticed that the children who drank pasteurized milk needed more dental work than those that drank raw milk or that drank mother's milk, that there was about fifteen per cent less calcium in pasteurized milk than there was in raw milk.

I would like to know if it is because so many of those mothers in those towns just boil the milk for their children, very few of them nurse them, themselves—whether that has anything to do with it?

Dr. Branch came to our county and went to this town some time ago and talked to the High School Parent-Teachers' Association. They didn't wait at all at that meeting. The Roanoke Rapids Kiwanis Club underwrote a dental clinic just for those schools for next year, in addition to the county-wide general clinic. That will give those schools twenty weeks of dental work—right in the Roanoke Rapids school. I am going to call the name of the school. He put the matter so forcibly to the Parent-Teachers' Association—and I had tipped off one or two members of the Kiwanis Club and got them to come to listen—that after his address they came up and obligated themselves to put a dentist in those schools for the next session, starting early next year.

I would like to make a survey of that community and that town and see if we can find what is the cause of the enormous need of dental work in those schools. I don't know exactly how to do it, but I am going to keep on trying to study and see if we can't make some survey of why those children suffer so from need of dental work.

There happened to be a strike about three years ago there, and the people were out of work for a good long time. Whether it was the lack of

proper food or nourishment, or what, I don't know, but I do know that it is a fact that the need for dental work is a great deal more urgent in the schools of that town than in any other place in the county.

I consider that this Kiwanis Club of Roanoke Rapids is doing as progressive a work as could be done by any civic club in the State. For eighteen months they ran an orthopedic clinic, and honestly, they didn't get patronage enough to guarantee the continuing of the clinic. In examining the school children of Halifax County and Northampton County—it so happened this year that I had to examine both counties; only the Roanoke River divides the counties—I never saw in all the clinics of the county a single child who was crippled. I think that was remarkable. Out of all the colored and white children of the two counties, I didn't find a single child needing orthopedic work.

But we did find a good many of them needing dental work—I guess the general average would run seventy or seventy-five per cent. Why that is, I will admit I don't know. I am thoroughly convinced of the great importance of dental work, and sincerely hope that we can get it. We will have forty weeks of dental work in our schools next year, and I hope that in probably a year the county will just come forward and equip and employ a dentist to stay in the county from one end of the year to the other. I don't know whether that is coming or not, but it looks as if it won't take much more to get it. But, as I say, we will have forty weeks of dental work next year anyway.

President Buie: Is there any further discussion? If not, I will ask Doctor Branch to close.

Dr. Branch: I think there is nothing further I need to say. I appreciate the discussion.

President Buie: We were glad to have you, Doctor.

We are changing all around this morning. Dr. Hudson has agreed to withdraw at this time, and we will have the paper, "Increasing the Usefulness of the Widal Reaction by Using 'C' and 'H' Antigens to Differentiate Sera from Clinical Typhoid Fever Patients and Sera of Individuals Vaccinated Against Typhoid," by Dr. Samuel R. Damon, Assistant Professor of Bacteriology, Johns Hopkins University School of Hygiene and Public Health.

Dr. Damon! (Applause)

Dr. Samuel R. Damon: Mr. President, Ladies and Gentlemen: By way of introduction, I should like to say that of course it is a great pleasure for me to appear before this meeting. It is a pleasure for several reasons. In the first place, it is perfectly obvious that this is a group of very progressive workers in the medical field representing all branches of public health.

In the second place, I am glad to have the opportunity to speak to you, because I am something of a propagandist, too. I don't know whether I

shall be as obviously a propagandist, perhaps, as the previous speaker. I think that it is a fine thing, though, that we have an opportunity to present a little propaganda before the people who are most interested in it.

In the third place, I am glad to have an opportunity to appear before you because it gives me a chance to get away from the laboratory for a few days, even though I have to work for the vacation. All you have to do is be bored by listening to me. But I have to work.

Finally, I might say that it is a great and unexpected pleasure to appear here this morning because I find that there are several people in the audience with whom I have been acquainted for a long time. I am surprised that they are here, inasmuch as this program, with my name on it, has been published in the daily press. In the first place, there is Dr. Foster who was at the School of Hygiene as a candidate for the Certificate of Public Health, and who was one of my students in 1932. Then there is Dr. Williams, who is the County Health Officer in Asheville, who was also at the School of Hygiene, in 1927.

Dr. Hege, I find is not here this morning.

MEMBER: Yes, he is.

DR. DAMON: My gracious! I thought he would stay in Baltimore. I thought I could get away from him for a day, anyway. Really, he ought to be up there attending to his business. (Laughter)

Well, I wondered when Dr. Hege was kind enough to arrange for me to appear here this morning just what he had in mind. I thought possibly he wanted all you folks to appreciate how much he had to put up with this year and how much credit he deserved for sticking it out. You know, I had him as a student or he had me as a teacher for about half of the year. So I am doubly surprised that he should be here this morning.

So much by way of introduction.

Now I say that I am a propagandist. That is, I am glad to have the opportunity to speak on this particular subject, because everybody is delighted to have an opportunity to speak about something they are particularly interested in, themselves, and I have been interested in the diagnosis of typhoid fever and the enteric infections for several years, have done a good bit of laboratory work on the subject, and have inflicted on the reading public certain reports on that work. How much of it they have read, I do not know.

We will get on with the story.

The title of the paper is quite formidable and very misleading. It isn't anywhere near as formidable as you might gather from the title.

. . . Dr. Damon then presented his prepared paper. . .

THE SEROLOGICAL DIAGNOSIS OF ENTERIC FEVER

By S. R. Damon, M.D., Baltimore, Md.

INTRODUCTION

The superiority of the evidence afforded by direct isolation of the causative agent in any infection over the evidence afforded by any indirect method of serological diagnosis may be taken as axiomatic. Admitting the truth of this statement it never-the-less is a fact that confirmation of the clinical diagnosis or differentiation of one infection from another can often only be made on the basis of some immunological test. Of the various reactions commonly employed for this purpose the agglutination test is perhaps most often used and it therefore behooves us to understand the limitations to which the test is subject. This is eminently true in the application of the test to the diagnosis of the group of typhoid and paratyphoid fevers.

Historically, it is true that the first application of the agglutination reaction in a practical way was made by Widal and Grunbaum in 1896 in the diagnosis of typhoid fever and ever since that time it has been common practice to refer to this procedure as the Widal test. From the first, however, it was recognized that there were certain reasons why the results of a Widal test, in any given case, might be open to question if not actually erroneous. And it may be said that the accumulation of further information of recent years has not only substantiated the doubt as to the vitality of the results in many cases but has made it increasingly evident that the classical Widal test is all too often of no value whatever.

SOURCES OF ERROR IN THE WIDAL TEST

1. It may be negative if the blood is taken too early in the disease as agglutinins may not yet have been produced.

2. It may give false results as it is continuously negative in some cases that are clinically typhoid fever.

3. It gives doubtful results sometimes, due to the presence of normal agglutinins in titres usually taken as diagnostic of specific infection.

4. It yields dubious results in the presence of agglutinins that have been produced due to the stimulation of some other febrile condition.

5. The results are notably unreliable in the individual who has ever suffered from enteric infection previously, or has received prophylactic T. A. B. vaccine, due to the presence of residual antibodies.

6. It gives unreliable results in persons who have ever had enteric infection or been vaccinated prophylactically due to the restimulation of agglutinin production in the presence of fever due to any cause whatever. This is the so-called Anamnestic reaction.

7. Diagnosis is complicated if exclusion of the presence of a paratyphoid infection is desired.

8. It is difficult to maintain standardized cultures to be used as agglutinating antigens that will always give reliable results.

9. And finally, errors in the interpretation of the results obtained have not been unknown due to variations in the significance attached to reactions in different dilutions of the patient's serum.

STEPS TAKEN TO ELIMINATE THESE SOURCES OF ERROR

To overcome at least some of these drawbacks to the test efforts have been made to standardize the procedure. Thus blood specimens were habitually not taken until the second or third week of the disease; the age of the culture to be used as the agglutinating antigen, the medium on which it was to be grown and the frequency of transfer and temperature of incubation have been carefully controlled; and an arbitrary standard such as complete agglutination in 30 minutes in a 1:50 dilution of the patient's serum has been taken as the lowest that could be considered as diagnostic.

These steps undoubtedly served to minimize some of the sources of error in the test and when it was carried out under the prescribed conditions the test was, on the whole, fairly satisfactory and yielded information often of great assistance in confirming the clinical diagnosis. Its shortcomings in those cases of sera submitted from patients who had had previous enterica or been prophylactically vaccinated and had residual agglutinins or in whom a restimulation of agglutinin production as the result of fever due to any cause whatever still remained however.

To eliminate as many of these sources of error as possible Dryer next introduced the use of formolized broth cultures as antigens as these remained uniformly sensitive for long periods of time and when used according to the meticulous directions given for his technique greatly increased the accuracy of the results obtained. We know now, however, that even this refined method was not above criticism. Without going into all the details it may be said that it is now realized that Dreyer's method permitted of detection of but one type (H) of agglutinin in the serum and that it did not differentiate between *inoculation* and *infection* antibodies nor did it permit of recognition of those positive reactions due to non-specific stimulation or an anamnestic reaction.

Obviously, then, what was needed was a method of performing agglutination tests that would permit of unequivocal differentiation of *infection agglutinins* from those present as the result of non-specific stimuli, an anamnestic reaction, or vaccination. Such a method is now available in the procedure that has been designated as,

THE METHOD OF QUALITATIVE RECEPTOR ANALYSIS.

This method is based on the observation made by Theobald Smith in 1904 that flagellated organisms contain at least two separate and distinct immunogenic antigens which give rise, in the infected or inoculated individual, to separate and distinct antibodies. One of these antigens is con-

tained in the flagella of the organism and is referred to as the H antigen and the other is associated with the soma of the cell and is called the O antigen. In the infected or inoculated individual these antigens give rise to separate and distinct H and O antibodies, the presence of which may be detected in the serum by simple inspection, using suitable H and O agglutinating antigens.

In the interpretation of the results of agglutination tests that are reported in terms of H and O antibody titres the physician must appreciate their varying significance in, 1) those patients who have ever had enteric infection or been inoculated and 2) those who have never had enterica or been inoculated. In brief this difference in significance is as follows:

A. In patients having no history of enterica or inoculation.

In such individuals both H and O agglutinins are produced as a rule but sometimes only the H or the O and very rarely a case is encountered in which neither appear. Of course, in any individual in whom there is no antibody production no method of serological examination will be effective but assuming a normal antibody response it is now established that:

1. A titre of 1:200 of H agglutinin is diagnostic and indicative of the infecting species.

2. A titre of 1:200 of O agglutinins is highly suggestive but does not indicate the infecting species and necessitates a report or an interpretation of enteric infection, type undifferentiated.

3. A significant rise in the titre of O agglutinins is diagnostic when blood samples is definitive but admits of an interpretation of "enteric infection, type undifferentiated," only.

B. In patients having histories of either previous enteric infection or prophylactic vaccination.

1. In such sera the presence of H agglutinins has no significance as it is known that their reproduction is stimulated by non-specific as well as specific infection.

2. A titre of 1:400 of O agglutinins is suggestive of enteric infection but does not indicate the infecting organism.

3. A significant rise in the titre of O agglutinins is diagnostic when observed in serial blood tests without indicating the infecting organism.

4. In this group of individuals an Anamnestic Reaction is frequently observed, that is, a rise in titre of the H antibodies as the result of any febrile reaction whatever without a concomitant rise in the O antibodies. Thus, a patient may show a rapidly rising titre of H antibodies for the typhoid bacillus in the case of an acute upper respiratory infection but this should not be a source of error in diagnosis as there will be no rise of O antibodies under such conditions. Thus, by separately determining the titres of the two antibodies or the rising titre of the H antibody only in serial tests we may distinguish between infection and inoculation agglutinins.

ILLUSTRATIVE SLIDES

1. Curves of O and H agglutination for B. typhosus following T. A. B. inoculation.

2. Chart showing H and O agglutination in vaccinated individuals based on average titres of groups at various time periods after inoculation.

3. Widal reaction in healthy (T. A. B.) vaccinated persons. Shows response in terms of H and O titres.

4. Serum reactions in proven cases of typhoid fever. Non-vaccinated patients. Shows response in terms of H and O titres.

5. Serum reactions in proven cases of typhoid fever. T. A. B. vaccinated patients. Shows response in terms of H and O titres that are diagnostic.

6. Clinically enteric fever. Non-vaccinated patients. Culture negative. Shows response in terms of O titres that are diagnostic. No H titres. "Type undifferentiated."

7. Clinically enteric fever. Inoculated patients. Culture negative. Shows response in terms of O titres that are diagnostic of "Enteric fever, type undifferentiated."

8. Anamnestic Reaction. Inoculated patients having various non-typhoidal diseases. Shows response in terms of H titres with an absence of O agglutinins.

9. Laboratory reports on sera submitted for diagnosis.

10. Chart showing for successive weeks of the disease, the average frequency with which B. typhosus can be isolated from the blood or feces and the frequency with which the serum gives a diagnostic agglutinin reaction.

CONCLUSIONS

1. In any suspected case of enteric infection the best chance of obtaining a confirmatory laboratory diagnosis will be from a blood culture during the first ten days of the disease.

2. During the latter part of the second week and during the third week confirmation of the clinical diagnosis is most likely to be obtained in the laboratory from the examination of stool specimens. However, blood culture or agglutination may be positive during this period.

3. From the third week through convalescence confirmation in the laboratory is best obtained by agglutination tests.

4. No matter what the method employed for the serological test the true history of the patient, with regard to previous enterica or prophylactic inoculation, *must* be obtained before an intelligent interpretation of the agglutination test results can be made.

5. If the laboratory uses the method of Qualitative Receptor Analysis in doing agglutination tests interpretation of the results must be made with

reference to the previous history of the patient as regards prior enterica or vaccination as follows:

A. In the individual with no history of disease or inoculation:
   1. The H agglutinins are significant and indicate the infecting species.
   2. If the infection happens to be with a non motile, i.e., non-flagellated, organism the O antibody is significant and permits of a definite diagnosis of enteric infection without indicating the infecting species.

B. In the individual having a history of enterica or vaccination:
   1. The H agglutinins have no significance.
   2. The presence of H agglutinins even in high titre or in a rising titre without an accompanying rise in the O antibody is indicative of an Anamnestic Reaction and the diagnosis of enterica is definitely ruled out.
   3. The demonstration of O agglutinins in titres of 1:300 or over permits of definite diagnosis of enteric infection without indicating the type.

6. In any suspected case a marked rise in titre for the O agglutinins, as determined in tests made at intervals of a few days, is of the greatest significance in establishing the diagnosis. In fact this is the only test that need be made if identification of the infecting species is not necessary.

President Buie: Dr. Hamilton of Raleigh will open the discussion of Dr. Damon's paper.

Dr. John H. Hamilton (Raleigh): Dr. Damon has presented a very timely and informative paper. That his conclusions are fundamentally sound is attested by the fact that the referee on serological and bacteriological procedures in the diagnosis of enteric fevers for the American Public Health Association has recommended that the methods outlined by Dr. Damon be made a part of the standard methods used by public health laboratories.

It is well to emphasize the point brought out by Dr. Damon that in persons who have had previous experience with the typhoid bacillus any condition which causes an elevation of temperature will produce an increase in the H Agglutinin Titre. This phenomenon is so frequently overlooked by our clinicians that considerable confusion has been caused in the past. In laboratories that have no history of the patient I am wondering if it would not be advisable to report only the O Agglutination Titre, since in North Carolina at least we have a high percentage of individuals who at some time have had typhoid vaccine.

As far as the control of the disease is concerned, it doesn't make much difference whether it is typhoid or Para A or Para B, because you can make a diagnosis of enteric infection without leading your clinician astray with an erroneous diagnosis. I rather feel that perhaps we would be

justified in withholding some of the information, so that errors would not be caused.

I was particularly pleased that Dr. Damon recommended the importance of blood culture methods in diagnosing typhoid fever. To us health workers, early diagnosis is of utmost importance and your blood culture will give you the earliest possible laboratory aid in making a diagnosis of typhoid fever. I am also pleased that he has recommended serological procedures only when the patient is seen too late in the course of the disease for blood culture to be practical.

We in North Carolina have emphasized repeatedly that typhoid fever should be diagnosed by blood culture. We maintain that a laboratory does not make a diagnosis, but merely furnishes evidence which will aid the attending physician. Nevertheless, a blood culture which reveals typhoid bacilli has supplied the physician with about all of the evidence which is needed for making the diagnosis for typhoid fever. When the disease is identified in this stage health workers occasionally have an opportunity to protect others who might have been infected from the same source. They certainly have an opportunity and the responsibility to prevent secondary cases.

In 1936 the Laboratory made blood cultures for typhoid fever from specimens sent from ninety-four of the one hundred counties in the state. Specimens from fifty-seven counties yielded positive cultures for either typhoid or paratyphoid. Of the five hundred and eighteen cases reported, the Laboratory found two hundred and twelve positive blood cultures for typhoid and seven for paratyphoid B.

For more than eleven years we have been culturing blood clots for typhoid. The first blood culture was reported on April 10, 1926, to Dr. Baker of Lumberton. For several years we have been making agglutination tests only from serum withdrawn from specimens of whole blood. The clot is cultured and the serum subjected to the agglutination test. In 1936, one hundred eighty-nine specimens gave positive agglutination tests for typhoid, one for paratyphoid A and four for paratyphoid B. Not infrequently a single specimen would be positive by both blood culture and agglutination test.

The physicians of North Carolina have an increasing appreciation of laboratory methods for the diagnosis of typhoid fever. The earlier we make the diagnosis the more intelligently we can apply control procedures. However, no typhoid control program is complete unless it includes the release of typhoid patients from observation only after a repeated negative culture of specimens of urine and feces. In addition, we should use intelligent epidemiological evidence for the location of carriers.

I wish to thank Dr. Damon for his paper. I am certain that this is a real contribution to our efforts to control typhoid fever in North Carolina. (Applause)

PRESIDENT BUIE: Is there any further discussion of Dr. Damon's paper?

DR. JOHN SYMINGTON (Carthage): I need hardly say how much I enjoyed Dr. Damon's paper, and also Dr. Hamilton's remarks.

I would like to ask a question of Dr. Damon: what, in his experience, is the percentage of typhoid carriers, and if we must rely on the stool test, and if the blood test is any help in the diagnosis of carriers. Also, I should like to ask him what, in his experience, is the number of years that a typhoid carrier carries the infection.

DR. A. C. BULLA (Raleigh): The question I wish to ask perhaps is beyond the scope of Dr. Damon's paper, but it is something we people in the field are very much interested in, because it is a question that frequently comes to us that we must answer in some way.

You noticed his titre for agglutinins in inoculated persons was one to one hundred or one to two hundred. Just how many inoculations they may have had over a series of years was not mentioned.

The question we are frequently asked is this: if a person has had three inoculations over a period of nine or twelve years, would it not be just as effective as a preventive measure if that patient took one inoculation every year?

We are being confronted with that question and I would like Dr. Damon, if he will be kind enough, to give us some explanation along that line.

DR. JOS. A. MORRIS (Oxford): There is one question I would like to ask—it may have been answered, if I could have picked up the points that were made. I want to relate this case to Dr. Damon:

An intelligent nigger physician in our county was called to a nigger who was still up and walking about but who had been complaining for two weeks. The nigger physician getting a history of fever for that time took a specimen of blood, sent it down to the Laboratory, and received a negative Widal report.

A week later he sent another specimen, not knowing exactly from the history of the case when that case started. The second specimen had a report of negative.

The third week, the patient concluded he was getting better and didn't need the physician any longer, and the physician didn't expect to go back. But he was called back because there was a rise in temperature again. He took a blood specimen again and sent it to the Laboratory. He asked for a culture that time and it came back a positive culture—typhoid fever.

I would like to have that explained, please.

PRESIDENT BUIE: Is there any other discussion? If not, we will ask Dr. Damon to close, please.

DR. DAMON: Mr. President, I don't know that I can answer all of those questions. I will do the best I can.

As far as the frequency of carriers is concerned, the statistics indicate, don't they, that between four and six per cent of the general population are carriers. When you are talking about the recovered cases, the carriers probably run much higher than that. I think we can show statistically at the present time that ten to twelve per cent of recovered individuals become chronic carriers. I think, although I cannot prove it, that that figure is very low. I believe that within a few years newer methods of detecting organisms surviving in normal individuals who have recovered from enteric infection are going to show us that many more people who have recovered from the disease are actually carriers than our present methods detect. We are going to be very much surprised, I think, at the number of people who, once having had enteric infection, become chronic carriers.

As to the question of titres following inoculation I believe we can definitely say that following infection or following inoculation there will be a high titre of antibodies produced which will last for a period of six months. At the end of six or eight months, the titre of O antibodies will be down to one to twenty or one to forty, or to zero. The titre of H antibodies will continue high and remain high for an indefinite period of time. But those individuals on subsequent infection or re-inoculation will again produce high titres of H antibodies without any change in the titre of the O antibodies.

You do not get a rise in the O antibody except as the result of specific infection in people who have had previous enteric disease or previous inoculation. Therefore we rely as I pointed out on the rising titre of the O antibody for a diagnosis in people with a history of disease or previous infection.

As for the point that was raised about the yearly prophylatic inoculation, I know the gentleman who asked the question had in mind the relation of titre of antibody to immunity in that individual. Well, I don't think anybody can say that we have any definite information about the relation of resistance or immunity to titre of antibody in the blood serum. I am perfectly certain of this, though: that an individual who has been inoculated and whose titres of both types of antibodies has come down, let us say, to zero, still has a degree of protection which we cannot measure, because agglutination does not parallel resistance to infection in any sense. We don't know what the resistance mechanism is. However, I think experience shows that annual inoculations of one dose of triple vaccine will maintain a higher level of antibodies, and if that means anything in terms of resistance, we should interpret that as meaning restimulation of the protective mechanism of the individual.

Therefore, following one series of three doses, annual injections of one dose, I think, will keep up the resistance of your individual better than a series of three doses of vaccine every three years.

Finally, in regard to the question that was raised about the negative laboratory reports on three samples of blood followed by positive blood culture the third week of the disease or later: I mentioned the fact that sometimes we run into individuals whose antibody producing mechanism does not respond with the production of both types of antibodies. Sometimes you get a person who shows only the O antibody in his serum. Your ordinary Widal test as the laboratory carries it out detects only the H type of antibody.

Well, if your patient happened to be infected with a non-flagellated organism, he could not produce but one type of antibody. He could just produce the O type. If the typhoid bacillus which he had didn't have any flagella on it, it couldn't stimulate his body to produce anything but the O type of antibody. That O type of antibody is not detected by the classical Widal test. That was the reason the laboratory reports were negative three times in succession, but the blood culture yielded a positive isolation, even three weeks after the patient was first seen.

Thank you ever so much. (Applause)

President Buie: We are very thankful to Dr. Damon for this splendid paper. I am sorry he has to leave us so soon.

Dr. Damon: I would like to offer my apologies to the following speakers, but I am due in Wilmington some time this afternoon, if I can get there, and I must run. I apologize to those who come after me on the program.

President Buie: The next paper on the program, "An Administrative Public Health Problem," will be presented by Dr. C. C. Hudson, City Health Officer, Greensboro.

Dr. Hudson! (Applause)

Dr. C. C. Hudson: Mr. Chairman, Fellow-Members of the North Carolina Public Health Association: I made the title of this paper a general term. The real subject of the paper is, "The Security of the Health Department Employee—An Administrative Problem."

Some time ago in Greensboro we became interested in certain of our employees who had grown old in the service. This problem we found extended to our Public Health Department employees. We were particularly interested in the Police Department when we first started.

My paper does not apply so much to many of the older individuals like Dr. Morris, Dr. Reynolds, Dr. McGeachy, and a few of the rest of us, as it does to the younger individuals who are just coming into the service, and I thought it might be timely for us to consider it at the present time since our public health program is expanding so rapidly in the State.

Public health work has about passed through the experimental stage and public officials no longer look askance at the budget expenditure for this purpose. Our policies are becoming more standardized and the work is now recognized as a valuable function for national, state, and local

government. People have stopped asking the question, "Can diseases be prevented and certain illnesses be entirely eliminated?"

These facts have been too well demonstrated to be questioned. We know that with properly trained employees and a fairly adequate expenditure the lives of people can be lengthened and they can be saved much needless suffering and waste from preventable illness.

We people who have been in the public health field for a number of years have been so interested in the development of our work, in maintaining the gains which we have been able to make in this field and getting it recognized as a regular governmental function that we have not perhaps paid quite enough attention to the employee who has been engaged in the work. Too many times it has been necessary for us to use employees who are not particularly fitted for the position which they held because of the political exigencies of the occasion.

Recently, due to the passage of the Social Security Act by the United States Government and also due to the depression which wiped out most of the savings which health department employees had been able to accumulate, new interest has been stimulated among our employees in the question of their own welfare. While certain phases of the Social Security Act are devoted to public employees, they are left out of certain other parts of the Act, especially that part relating to old age pensions.

Industrial, mercantile and financial organizations have long recognized the importance of organized security measures for their employees. More than one hundred years ago seven companies in the United States had established retirement or pension organizations for their employees. Such plans as accident and sickness protection, guaranteed hours, vacation with pay, pension and retirement funds have been studied and carefully worked out by most of our larger individual organizations. The employees of the Civil Service Division of the United States Government have also worked out a definite plan covering most of the above points.

New York City was one of the leaders in this field and the New York City Health Department for a number of years has had a retirement and pension fund which has now been taken over by state law. A number of states, following the lead of industrial organizations, have also worked out definite plans for employees of the state and local subdivisions.

In North Carolina our teaching profession has taken the lead in this field but thus far it has only been able to work out a definite cooperative insurance plan with provision for protection during illness. This however has been a decided step forward as all the teachers working as a body have been able to secure rates which no individual could secure alone. While some of our local police and fire organizations in North Carolina have considered measures along this line and have at the present time small funds at this disposal which have been raised in various ways, so far as I know, no definite system has been worked out such as has been done in many states.

In considering what we can do along this line we must realize that nothing takes the place of individual thrift and initiative and that any measures that we adopt should supplement this. Many people, especially young adults, have so many home demands that it is almost impossible for them to save. The need of some relative for assistance takes the place of the savings account. The years drift by and soon the individual finds that he is not only not able to increase his earning capacity but that it is gradually declining. If his income is cut off by sickness, loss of position or death, he or his family may have no protection beyond a small insurance policy, the proceeds of which may go to pay high funeral expense.

We now have in the state group plans for hospitalization and many insurance companies give premiums covering illness for different periods. A small investment along this line is certainly advisable.

The state law governing compensation for illness and injury sustained while in line of duty covers health departments the same as other employees.

The advances which have recently been made under the provision of the Social Security Act for the training of old and new employees in health organizations has tended to raise the standards of the profession and to give our employees recognition as specially trained workers in the public field. This places them in the same position as our police and fire organizations. The increase in funds has also given us an opportunity to raise the income of the average worker, thus placing the individual on a more secure financial basis.

As our workers increase in the public health field it would seem that it would be advisable to work out some system of retirement fund and old age pension, either on a basis of joint contributory plan by workers or by the combined assistance of contributions from workers and public funds, such as is contemplated under provisions of the Social Security Act for private employment.

Some individuals who have sufficient income can probably care for this problem themselves through the proceeds of insurance annuities which can be paid for over a number of years and have a permanent income when they reach a certain age. A young individual who has a fair income can do this. It would seem to me, however, that if our public health workers were included in a system such as is contemplated by the Social Security Act that it would be more satisfactory from the standpoint of all concerned. The cost to the worker is not prohibitive, the maximum being three per cent of his salary. The cost to the employer is also not exorbitant, being the same. Of course, if we did not come under the Social Security Act, various factors would come into play, considering the cost to the individual worker. In some places this cost runs as high as fifteen to twenty per cent of the salary, which makes it entirely prohibitive.

The cost under this system would naturally be lower than it would be

under a system of insurance where a number of factors, such as the selling cost, must be taken into account.

Where the individual is retired at an early age, for instance, fifty or fifty-five, we know that the cost to the fund would be much greater. In most places the retirement age varies from fifty-five up to seventy. In most states where they set the age at seventy the retirement is compulsory when the individuals reach that age. Voluntary retirement, however, in most cases can be secured at a younger age.

The amount of income in most of these systems that have been worked out depend upon the length of service which the individual has given. For instance, the usual system of calculation is to take seventy, and take the proportionate part of the individual's income for the years he has been employed, so many seventieths of it. If he has been working ten years, he would take one-seventh of his annual income and that would be his pension. If he has been working twenty years it would be two-sevenths; thirty years, three-sevenths, and so on. However, in most systems of pension benefits and retirement funds they also have a provision in regard to the maximum amount which any individual may receive.

We realize that a public system has certain weaknesses, such as change in political setup, the tendency of some public bodies to overspend and to use the funds contributed to fill in weak places in their budgets, the appointment of poor managers to have charge of the funds, etc., and thus dissipate funds which have been secured.

We find, from studying a good many of these systems which have been in operation for years, when the funds run short, it is very often difficult to have appropriating bodies provide adequate funds for the purpose. But with proper management, we believe that a system of this type should prove of distinct value to the employees in the public health field.

Recently since I started the study along this line steps have been taken by the American Municipal Association and some other organizations toward having public organizations placed under the Social Security Act on a voluntary basis. If this is done it will give our cities, counties and states an opportunity to share with industrial organizations in the benefits of this phase of the Social Security Act. (Applause)

President Buie: The discussion of Dr. Hudson's paper will be opened by Dr. R. E. Fox, of the State Board of Health, Raleigh.

Dr. Fox: Mr. President, I am sure that Dr. Hudson is to be congratulated on his splendid presentation of this subject which he has given us this morning.

This is a problem I feel that is coming to be realized more and more by public health workers.

Those of us who have been concerned with the employment of some additional personnel through the recently enacted Social Security Act have

been confronted by one question: what security of office do we have? And, what is the future prospect for public health workers as a career service?

They are looking forward even as young fellows to what may happen to them later in life.

You might be interested to know, in that connection, that at the recent meeting of the Conference of State and Territorial Health Officers at Washington, this matter of career service was introduced and discussed, and the matter was referred to a committee for study over the coming year, with a view to having certain recommendations presented to that conference for action and probably adoption a year hence.

That of course affects the career of public health workers. Dr. Hudson's paper touched more on the period after we have completed that career and have to give up work—what is to become of us?

In that connection it might be of interest to state that at a recent meeting of some state workers who were considering some form of credit for various state employees, it was suggested that it was going to be necessary to bring this matter to the attention of the State Legislature, that some plan might be devised and legislation enacted whereby state employees—and that means county employees, too, because it should be extended to them as well—might come under some old age insurance plan.

I think it would be well if this Association could refer to the proper committee for recommendation and action of that committee that public health workers be included in anything that is proposed before our Legislature along that line, and that we not be left out, because I think that Social Security has shown the way in the field of private industry. I think the people are one hundred per cent behind them in theory in what they are doing, whether they are in pocketbook or not. And it does seem unjust, in a way, that people who are working for governmental agencies should be left out. I hope, and believe, that sooner or later they will be brought in as well.

I am mighty glad that this paper came up at this particular time because it is most timely and Dr. Hudson has given us some splendid points to consider.

Thank you. (Applause)

President Buie: Is there any further discussion of Dr. Hudson's paper? It is a subject in which we are all interested. I would like to hear further discussion. If there is none, I will ask Dr. Hudson to close.

Dr. Hudson: I have nothing further to say. I wish to thank Dr. Fox for his discussion.

President Buie: We are running a little behind schedule, but I think we will get through in plenty of time for luncheon.

The next paper on the program is, "Program Planning in the Local Health Department," by Dr. Roy Norton, State Board of Health, Raleigh. (Applause)

. . . Dr. Norton presented his prepared paper. . . (Applause) .

PROGRAM PLANNING IN THE LOCAL HEALTH DEPARTMENT

By Roy Norton, M.D.

Assistant Director Division of Preventive Medicine
North Carolina State Board of Health

To carry out any comprehensive piece of work intelligently, it is necessary to do some careful preliminary planning. It is particularly true of public health work that the dreamer and the planner must precede the organizer, the administrator, and the practical worker. All of these tasks may be, and frequently are, done by the same individual. There is, however, a natural orderly sequence of events in the development of a public health program and in every case where this is not observed, there is confusion, lost motion, overlapping work, and general inefficiency. Without a carefully prepared plan there can be no harmony or coordination, but only a babel of voices and efforts, each tending to nullify the effectiveness of the others.

Program planning will help to establish and maintain a reasonable balance between too much standardization and rampant individualism. Some health officers not only fail to make department programs but have stifled their individual staff worker's attempts at planning by the practice of making day to day assignments. By having a planned program, the work much more rapidly assumes a balanced distribution following the seasonal emphasis on certain items or after an emergency, such as an epidemic.

In this discussion, it is presumed that there is the minimum staff of a health officer, two public health nurses, a sanitary officer, a dental program, and an office clerk. It is well also to realize in the beginning that the program is partly determined by whether it is a community without a public health department previously, whether the staff workers are new in the work or in the community and also by the personalities, training and interests of the personnel.

A logical beginning toward program planning is the taking of a careful inventory of existing community resources. It is particularly important to evaluate properly the human resources—physical, mental, and spiritual. Somewhere in the growth of a plan there should also be felt the benign influence of a solid understanding of certain facts in history, biology, and economics as they relate to the particular community to be served. The heredity, religion, and traditional customs of the people and the local environmental conditions interact upon each other and in this setting certain impressions tend to persist. The health planner will be keen to recognize, evaluate and deal with these things.

Certain general preliminary information regarding the community to be served is essential in the formulation of a local health program. The surrounding area may vitally influence local conditions and should not be

ignored. Any previous health surveys or inventories should be read but not dogmatically accepted or followed. Their chief value would be in their use in making comparisons with the present study for any tendencies or trends. The geography, geology, climate, topography, and waters should be studied. The population as a whole and separated according to age, sex, and color, with any recent changes, should be understood. Vital statistics records for the last ten year period yield valuable information on health trends. Maternal, infant, neonatal and specific communicable disease death rates studied according to area, economic background and race may show vulnerable points so that an intelligent attack may be aimed at their reduction. The prevalence of cases of the communicable diseases, including interitis, puerperal septicemia, and pneumonia, may be charted. An appreciation of special problems, such as syphilis, hookworm, or malaria, may thus be obtained.

Industries and occupations with their specific hazards and rapid travel or communication are of increasing importance. In what ways do occupation or moving around influence local health conditions? Per capita wealth, bonded indebtedness and tax rates are the usual economic figures studied, but the distribution of wealth among the families in the community has a more direct health bearing.

Sanitation facilities in the area may be evaluated according to (1) sanitary status of towns and villages, (2) conditions of rural water supplies and excreta disposal, and (3) condition of milk supplies and food handling places. The sanitary facilities of schools are of special importance.

An inventory of such general community resources as the following should also be made:

(1) Clinics, laboratories, sanatoria, hospitals.
(2) Physicians, dentists, nurses, midwives, and local registrars. (Also know the irregular practitioners, quacks, cultists and faddists.)
(3) Churches, schools, school population.
(4) Clubs and other organizations actively or potentially interested in public health.
(5) Recreation facilities.
(6) Available library resources.

The state statutes, State Board of Health regulations and local ordinances should be made easily accessible for reference. Plans should be made for codifying and bringing the local health regulations up to date.

It might almost be considered that a check of lay participation facilities and plans for their use is a part of the preliminary survey. All interested and potentially helpful community groups should be contacted and their support and participation enlisted. Civic clubs, women's clubs, P. T. A., churches, Red Cross, schools, welfare organizations, scouts, home and farm demonstration agents can prove especially helpful. They can help to spon-

sor, promote and lend clerical assistance in, or furnish transportation for, the clinics. After the willing and capable workers are recognized, such organizations as civic groups, county P. T. A., Red Cross, tuberculosis association, nurses' association, Medical Society, etc., should be asked to select one member each as a member of the county public health council.

Certain principles should underlie the choice of objectives and methods selected following the tabulation and analysis of the inventory of the community. Among the determining factors are the community needs, desires and facilities. From experience and study, the health director should know what activities are most likely to be adaptable to, and prove successful in achieving the desired objectives in, the community.

The appraisal forms (rural, city, and N. O. P. H. N.) will be of assistance in keeping balance in the general line of work to be followed. There will, however, be certain problems selected for initial or special attack. Special abilities of the staff as well as immediate community needs are to be considered, but the program must be carefully generalized and kept that way. Where, as is usually the case, only a part of the accepted standards of activities along the different lines can be taken care of, those promising most community health protection and promotion are to be selected. This principle applies whether considering maternal and child hygiene, communicable disease control, school work, or sanitation activities.

Having assembled all possible data on community resources and facilities and by their analysis having determined the general and special community health needs, one is then ready to set up tentative objectives. These may be divided into (1) expected results to be accomplished, and (2) amount and quality of specified types of service to be rendered. Examples of the former would be to:

(1) Secure approved sanitation facilities at all schools, including especially water supply, excreta disposal, hand washing equipment, and drinking facilities.

(2) Bring all midwives to have Grade A certificates.

Examples of the latter type are to:

(1) Examine all children in grades one, four, and seven in schools.

(2) Find all typhoid carriers and contact each personally (health officer) every three months.

Objectives of results to be achieved should be set up for each phase of the generalized program. Activites offering greatest promise of contributing to these ends can then be selected. The program should vary from year to year. The experience of many departments has shown the usefulness of stressing one thing one year and another the next. The services to be rendered in clinics or home nursing visits should be carefully determined and standards adhered to.

A very important step in program planning is the blocking out of a table of time for each worker and for the major activities. Certain days

and hours should be left open for emergency work, routine office or report work. A minimum of time should be devoted to nuisances, travel, report making and welfare work and the maximum to health education and preventive work. No definite division of time can be made between field, travel and office work, but there are certain preferable seasons for emphasis on preschool work, school work, malaria control or communicable disease control. The time of day is important in planning certain parts of the work, as for instance postpartum visits are preferably made early in the morning and clinics or centers for mothers can be attended more conveniently in the afternoon. Preschool clinics are best held in the early spring. Annual reports are made in January. A special public education campaign with the next budget in mind is made in May and June. It is of special importance that time and funds be allotted for progressive improvement of the personnel by a continuing plan of staff education through visiting other departments, attending district, state, and national professional meetings and the regular monthly or weekly staff conferences.

I have referred to planning by the health officer, and he is, of course, responsible for the work done by the department. It is best, however, for the entire staff to contribute toward formulation of, as well as carrying out, the program. The local medical society, the county public health council and more directly and officially, the county or district board of health will help to determine certain general principles to be followed.

It is perhaps best to block off the time first on a yearly basis, then according to months, and later by weeks and days. The final separation by weeks and days can largely be done by the individual worker, with the health officer exercising general supervision to see that the generalized program is being adhered to. Where there are two or more nurses or sanitary workers, it is usually more economical to divide the work geographically rather than by specialization.

Sanitation is the oldest type of public health work. It has been modified many times and here, perhaps more than in most other phases of the work, every activity must be carefully evaluated. Like Chapin, every health officer should be his program's severest critic. Those efforts found valueless, as fumigation and terminal disinfection, must be discarded and only those of proved usefulness retained. A careful balance must be kept in order not to overemphasize or neglect certain activities. Only by careful planning, accurate recording, and an occasional look backward and forward can a generalized program be maintained. Promotion of the new, and maintenance of the already established facilities, keeps the sanitary officer busy. Water supplies, waste disposal, food supplies including milk, housing, industrial hygiene with accident prevention, control of flies and rats, all come in for their share of attention. One must prevent the tail of purely aesthetic considerations, or nuisance chasing, from wagging the dog.

In sanitary work clear legal regulations are essential. And they should be regularly modernized and codified. Keep in mind, however, that an

indictment usually means a failure in the most vital element of public health work—health education. I know one sanitary officer who was ready to begin indicting within six hours after he started his job. Keep in mind the Bible story of the still, small voice.

Communicable disease control work occupies a considerable proportion of time, especially during certain seasons. Require reporting and quarantine only when these procedures are made of epidemiological value. Except for smallpox, where there is no other reliable general applicable preventive, immunization procedures or preventive inoculations, can be overemphasized. Infant tuberculosis and syphilis are not being fully recognized. We are not finding and following up our typhoid carriers adequately. The laboratory should be made ever more useful to the local physicians, and serviceable to the community.

Vital statistics records should be carefully analyzed and interpreted—not merely copied out and filed away to be forgotten.

The maternal and child hygiene work should occupy two-thirds of the nurses' time. Nearly 80,000 babies are born alive in this State annually. Most expectant mothers receive inadequate prenatal care. One-third of the births are attended by midwives, some of them ignorant and unclean. Where there is not good reason to expect that the mother can safely withstand the ordeal and bear a normal baby, conception should be averted. We have too many septic abortions. Infanticides still occur too frequently.

Next to the prenatal and infancy period, that of preschool age is the best for doing most good in protecting and promoting health. Yet the preschool child is still the "forgotten" individual.

The utmost should be made of the golden opportunities for health instruction through talks, news articles, radio and distribution of literature. The school work carried on by the Division of Oral Hygiene has demonstrated an opportunity for health education previously neglected and still largely untouched in other phases of public health work. Spot maps, charts, and graphs help to keep the work balanced and are instructive too. The clerk, the nurses, the sanitary officer, and the health officer should keep ever before them the statement of Elisha Harris that "the permanent value and success of any method or system of sanitary government will depend upon the degree in which the people are generally enlightned, concerned, and made responsible in sanitary duties." A good entering wedge is to use teachers in school work and mothers in the clinic and center work to a greater extent.

The borderline work in the promotion of individual health and efficiency offers many pitfalls. The promotion of tonsil removal and orthopedic correction of crippled children, the prevention of nutritional diseases such as pellagra and rickets, the attempts at public education with regard to cancer or heart disease or the value of regular physical examinations are in this category. The control of lobar pneumonia is becoming an activity of

public health departments in some states, notably in Massachusetts and New York. In large departments a nurse-nutritionist has been found exceedingly valuable. Much common sense and perspective are needed by the health officer in planning this phase of his program. Public health work is primarily education and prevention and not welfare or curative practice.

A discussion of program planning would be incomplete without mention of the interrelationship of the various staff workers. Each is as a spoke in a wheel and is indispensable. Each can promote and make pleasant or can make difficult the efforts of others. The nurse can sell sanitation. The sanitary officer can stimulate appreciation of the nurses' more personal service. The health officer can strengthen or can nullify departmental activities. The clerk as go-between can in her many contacts promote the work and public appreciation for it or she can quickly and completely unsell it. The staff either hang together or hang separately. This does not mean that the whole staff should ride out to work in one car or even in twos. Gasoline might thus be saved, but the program would undoubtedly suffer.

No department program is efficiently managed unless there is incentive and opportunity stimulated toward research in disease prevention. Every staff worker should be looking for, and making, chances to improve and increase the efficiency of the public health service in the community. Little bits learned here and there will in the end mean as much as some work of vast proportions or may make the latter possible. The family folder type of records offers greater opportunities along this line than any other tool now in use. If accurately and carefully kept, these records will be increasingly valuable in many types of public health studies.

To summarize, (1) steps in the orderly development of a good local department program have been briefly outlined, (2) certain practical considerations easily overlooked have been mentioned, and (3) the fundamental importance of harmonious understanding, cooperation and vision among the staff members themselves have been emphasized.

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PRESIDENT BUIE: The discussion of Dr. Norton's paper will be opened by Dr. G. L. Rea, of Charlotte.

DR. G. L. REA (Charlotte): Mr. Chairman, Ladies and Gentlemen: My friend, Dr. Norton, has covered his subject so thoroughly that there is not much opportunity left for discussion.

I wish to emphasize, however, some of the things that he has said, namely, the work in what we call our "Well Baby Stations," that is, with the pre-school child. Also, vital statistics are quite important.

As I say, I think his paper has been so well written that discussion is not necessary. His outline has left us a target to shoot at. (Applause)

PRESIDENT BUIE: Is there any further discussion? This has been a very fine paper. We would be glad to have further discussion of it.

DR. N. THOMAS ENNETT (Greenville): Mr. Chairman, I rise to thank Dr. Norton for this very comprehensive paper. I don't think I would know just where to begin if I attempted to discuss it; there were so many good things in it it would be difficult to select the one that you would be most interested in. He said so many things that made me feel—and I suppose the other health officers felt the same way—we would like to have the number of our personnel multiplied a number of times; otherwise we wouldn't even be able to approach what he suggests. But as a vision is necessary and as Dr. Norton has suggested it, I am glad he spoke to us. (Applause)

PRESIDENT BUIE: Is there any further discussion? If not, I will ask Dr. Norton to close.

DR. NORTON: I have nothing further to add. I simply wish to thank Drs. Rea and Ennett for their discussions.

PRESIDENT BUIE: That concludes the program for this morning. I think we have had a very interesting program and I wish to thank all who participated in it.

. . . Announcement about the dinner. . .

PRESIDENT BUIE: Before we adjourn I wish to appoint two committees. On the Resolutions Committee I will appoint Dr. R. L. Carlton, Dr. C. C. Hudson, and Dr. R. E. Rhyne.

On the Nominating Committee I will appoint Dr. C. N. Sisk, Dr. Mitchell, and Dr. G. H. Sumner.

SECRETARY ELLIOT: Before we adjourn I want to ask Doctors Armstrong, Epperson, and Gambler to serve on the Committee on the President's Address.

PRESIDENT BUIE: If there is no further business we will adjourn until two-thirty promptly this afternoon.

. . . The session thereupon adjourned at one o'clock. . .

MONDAY AFTERNOON SESSION

May 3, 1937

The meeting convened at two forty-five o'clock, President Buie presiding.

President Buie: The meeting will now come to order.

The first paper on the program is "The Place of the Public Health Nurse in the Modern Health Movement."

Miss Virginia Jones, Assistant Director of the National Organization for Public Health Nursing, New York City! (Applause)

Miss Virginia Jones: After hearing Dr. Norton's paper, I can say that he stole my thunder and that much of what I have to say will perhaps duplicate what he said this morning, but I believe I have looked at it from a little different angle, from the angle of the public health nurse particularly, so maybe it won't be boring to you.

Before I go on, I want to bring a message to some of you at least. I was in Michigan University last month, and talked to a group of the health officers who were studying there. When I got through I talked to one in particular and mentioned the fact that I was coming here to this meeting. He said, "Tell the folks down there that I want to see them so badly. I am so homesick, I would like to leave right now."

He was Dr. Hardin and he wanted me to tell all of you who knew him that he wished he could be here for this meeting.

. . . Miss Jones then presented her prepared paper. . . (Applause)

THE NURSE IN THE MODERN PUBLIC HEALTH MOVEMENT

By Miss Virginia Jones, Assistant Director,
National Organization for Public Health Nursing, New York City

Today the public health nurse has been projected into the public health program with such force and speed that her activities are as varied as the agencies in which she serves. In one agency we see her acting as an adviser in nutrition, in another she is engaged almost entirely in maternity and child welfare work, in another she works only with crippled children, and in others she is the follow-up worker for treatment clinics for syphilis and gonorrhea, or engaged primarily in the program for control of tuberculosis and other communicable diseases. The "Functions in Public Health Nursing," outlined by the NOPHN and the Committee on Administrative Practice of the APHA, list twelve different phases of the community health program in which public health nurses are engaged.

Why, we wonder, has the nurse—who in earlier days was engaged entirely in bedside care of the sick—become such an important worker in fields where no bedside nursing care is offered. There are some good reasons.

No community health service can be effective when it is administered on the basis: "Here is a service—come and get it." Not only must many such services be carried to the people in their homes, in the schools, the industries, etc., but also they must be interpreted to the individual and his family in their relationship to his own needs and resources.

Because she is often the only person to visit homes and schools, the public health nurse is the one who explains to the mother why isolation and quarantine are a protection to her family as well as to her neighbors. She is the one who takes the minimum food requirements worked out by the nutritionist and helps the mother fit them into her limited budget. It is she who can interpret to the new father the value of checking to see whether his baby's birth is registered. The nurse often discovers the sources of communicable diseases in improper excreta disposal and unsafe handling of milk in the homes she visits. She interprets directly to each teacher the dangers of unhealthful environment for the children. These are only a few of the ways in which the nurse acts as a connecting link between the communicable disease service and the home, between the sanitation department and the school and the home, and between the vital statistics division and the community. She is the distributing agent for all departments of the health service, interpreting the findings and services of the various specialists in the health department, as well as the various other community agencies, to the man in the street, in such a way that he will use them to meet his own needs.

It is perfectly evident when we analyze the public health nurse's functions in the health programs—public or private—that public health nursing is most effective when it is developed as an integral part of the entire community program. Certain factors seem necessary in attaining maximum results.

CAREFUL PLANNING OF PROGRAM

The principle of determining needs, setting up objectives, and outlining activities and resources to meet them is accepted as advisable in many fields. How especially important it is in a field where the needs are so great, the possibilities so unlimited, and the qualified workers so few.

In the organized health unit the responsibility for planning an adequate program for the community falls upon the health administrator. He must consider the needs of the community as indicated by morbidity and death rates, general health conditions and results of special studies. He must know all the available resources for meeting the needs, helping the private agencies to fit themselves into the program where they can make the greatest contribution. He must find ways of filling the gaps and of avoiding duplication. In this he will need the help of his whole staff. All this involves an understanding of relationships and a definite division of responsibility among all agencies in the community. A council of community agencies has proved helpful in bringing this about. The major groups concerned are—in addition to the health department—the private agencies, the organized

medical profession, the education authorities, the local lay groups, and the welfare agencies.

As needs are met, certain problems are solved, and the number of workers and amount of financial support are increased, programs must be adjusted. An annual appraisal of the program in view of these inevitable changes would seem wise if the health program is to serve its purpose.

Appraisal forms are available from APHA, NOPHN, and USPHS.

To the director of the nursing service falls the responsibility of planning with the health officer the public health nursing activities, so they can be most effectively integrated and correlated into this well balanced public health program.

Here too certain steps must be taken:

(1) The nursing needs and special problems must be determined. For instance, the still-born rate, neonatal death rate, and mortality rate from congenital syphilis may be high. Better prenatal and maternity service is indicated. This is distinctly a public health nursing service and must be considered a need. In most rural areas a study of needs will show that a generalized service is usually considered most economical and effective.

(2) The available resources must be studied: If no other agency in the community is carrying the prenatal services indicated as needed, then it may become a part of the health department program. If some other agency is carrying it, the health department will find ways of strengthening and supplementing that service. Gaps should be filled and duplication avoided.

(3) Objectives should be set up for each service and activities planned to carry them out: The "Functions of Public Health Nursing" may be used as a guide to determine objectives and activities.

(4) Plans should be made for the actual field work: Obviously the rural nurse cannot cover her large territory fairly and most effectively without careful planning as to division of time. Many rural nurses are finding it very helpful to zone their territory, dividing it into—let us say—four districts, according to population, travel distance, problems, etc. Then each nurse plans to spend one week of each month in each district. This makes it possible for her to plan a definite visit to each district once every month and enables her to plan for work to be done in her absence. Within each district her visits must be spaced and program planned, according to population and needs.

Planning such a program may seem to the health officer and the inexperienced nurse too great a task to undertake. The state advisory nurses and the various consultants from the federal agencies are experienced in such planning. With the local workers in the field to furnish the facts and these consultants to help interpret them in terms of needs, there is really no reason for not having a well-planned and balanced community health program.

Had our early leaders been content to meet just the pressing needs, the public health movement would not have been where it is today. They anticipated and searched for problems, and set up preventive and promotional measures. We then must plan for expansion in our programs. In planning the public health nursing program we should be working toward the time when we can have sufficient qualified personnel, transportation, and equipment to carry on such services as delivery service, bedside nursing care, teaching active control programs in syphilis and gonorrhea, mental hygiene or psychiatric service, nutrition service, and others. These are services not often found in rural districts, but are certainly necessary if an adequate health program is to be provided.

QUALIFICATIONS OF PERSONNEL

It still is true that the best laid plans of both mice and men do often go awry. The important things to consider are the qualifications of the people who are to carry out these plans and the kind of guidance and supervision they get. This involves the training and experience of the staff nurse and the supervisor, the ratio of nursing supervisors to staff nurses, and the methods of teaching the staff on the job.

From a survey made by NOPHN of 28 cities, towns and counties, involving 222 nurses, the statement is made that "adequate provision for staff education and the presence of a comparatively large number of nurses on the staff who have had their professional preparation recently, are factors making for better performance of nursing staff." If this is true of groups of nurses working together, it is logical to conclude that the nurse working alone will need much more recently supervised experience and training behind her, much more within herself to draw upon, and more opportunity to take advantage of all supervisory and educational help that is available.

The NOPHN, in cooperation with the APHA Committee on Administrative Practices, has set up minimum qualifications for the staff nurse, the nurse working alone, and the supervisor. These are recommended for use by health departments by the USPHS, the USCHB, and the State and Provincial Health Officers.

The survey showed that the quality of any nursing service is in direct ratio to the amount and quality of nurse supervision provided. The minimum ratio which seems desirable, as to number of supervisors, is one supervisor to eight to ten nurses. Where there are only three to five nurses, one should be prepared and be given opportunity to act as supervisor. She may act as director also, and, if necessary, even carry a small district in addition.

RELATION OF NURSE TO SUPERVISOR

The nurse supervisor draws from her additional training and experience to help the nurse meet her nursing problems: She encourages her to analyze and improve upon her performance; she helps her plan her work

most effectively; she brings to her the latest up-to-date knowledge and methods which the nurse finds herself too submerged in work to hunt out. In the organization the director-supervisor interprets to the health officer the needs of the field; she helps plan the program; she standardizes the procedures, techniques, and policies so that they may be more uniformly safe and satisfactory; she plans the details of the day's work and takes care of the personnel problems. All of this is with the help and advice and under the general direction of the health officer in charge. Such nursing supervision is necessary, if the morale and performance of a staff of nurses are to be maintained at their highest effectiveness.

EXPERIENCE—VALUE AND LIMITATIONS

Staff education is the name given to continuous efforts made by the staff to keep informed, get stimulation, appraise and improve upon their performances, and further their own growth through group conferences and activities while on the job. Reading, attending state and national meetings, short leaves of absence for study and observation, and meeting with other groups of workers—are ways in which the nurse working alone may find help.

Until a few years ago most of the progress in the public health nursing field had been made by unofficial organizations. The chief strength of these agencies was in their lay boards and committee members, many of whom were responsible for the development of the official public health nursing services in their communities. It is reasonable to suppose that lay advisory groups can do as much for the official agency as they have done for the private agency in the way of assuring its continued financial support, and interpreting its services to the community. The NOPHN considers lay participation in any public health nursing program necessary for obtaining maximum results. It would seem logical to suppose that the same might be true of the program for the whole department.

Let us summarize in the words of Mary D. Forbes, Regional Public Health Nursing Consultant for the USPHS, who in a recent paper read before a regional conference of public health nurses, said that the factors which contain the elements of success in attaining maximum results in the nursing program are:

(1) Recognition that the spirit of the unit is more important than the mechanism.

(2) Lay interest and participation in the entire program.

(3) Development of the unit so that the health officer in charge places considerable responsibility upon his co-workers and receives their loyalty, and support of the objectives and spirit of the unit.

(4) Careful selection of qualified nurses.

(5) Annual formulation of the program for the nursing service drawn up by the health officer and nurse.

(6) Opportunity for the nurse to form cordial relationships with other officials and with voluntary agencies in connection with her work.

(7) Opportunity for the nurse to obtain practical aid and advice from state and regional consultant nurses and (we add) to grasp every reasonable opportunity for education.

PRESIDENT BUIE: The discussion of Miss Jones' paper will be opened by Dr. J. H. Epperson, County Health Officer of Durham.

DR. J. H. EPPERSON (Durham): Mr. Chairman, Ladies and Gentlemen: I don't feel that I can materially add to many of the fine points brought out in Miss Jones' paper. I do think, however, that the title of her paper is very significant: The Public Health Nurse in the Modern Health Movement, because I think most of us realize that we are in the midst of a new day in public health, and particularly in public health nursing.

I have attended the meetings of this organization for a great many years, and I don't think that I have ever seen as many nurses represented as there are here today. So I think that is concrete evidence that we are expanding.

It has been very fortunate that we have been able in a great many instances to secure Social Security funds, which has enabled us all to expand, particularly in our nursing program. I think it is most fortunate, too, that in view of the foresight and wisdom of our State Board of Health, we have been able to do what a great many of us have hoped for many years, that is, to see a school of public health established at our State University.

We have had the privilege and pleasure in Durham County of having a great many of these trainees with us for a period of time, many of whom I see in the audience here today. We too have learned, while they have been learning, many of the fine things, not only in public health nursing, but in medicine, sanitation, and what have you. It has been a great experience for us, and one that we appreciate locally very much.

Our public health nursing service in Durham has been expanded quite a bit in the past year, and, carrying out one of the suggestions made by Miss Jones, we have had a supervising nurse added to our staff, who has been of great help in carrying on the teaching program as well as assisting us in directing the program of public health we are attempting to carry out.

There have been a great many changes in public health work in the last few years. I can remember my first experience in the Birmingham, Alabama, Health Department; when I went there I had never heard of the public health nurse. In a city of 175,000 people we didn't have a single nurse on the staff. The sanitary inspectors rode bicycles. Maybe that was all right. I don't know, but they don't ride bicycles today, and we do have a lot of public health nurses.

I could talk for quite a long period of time on detail, I think. I am not a nurse, but I sit in pretty closely and do a lot of listening. We have a lot of folks here today, general supervising nurses and many staff nurses, many of whom I know are entirely capable and competent to give you a lot of detail about the public health nursing program.

So with these few remarks, Mr. Chairman, I will yield the floor to some of the other people. (Applause)

PRESIDENT BUIE: Is there any further discussion of Miss Jones' paper?

MISS JOSEPHINE DANIEL (State Board of Health): I should like to emphasize just a little bit what Miss Jones brought out in her excellent paper.

The first thing that we would like to emphasize would be the importance of home visiting. You know, home visiting isn't exactly a new thing in the world. It was an ancient custom among the British kings to call on their subjects, go into their homes.

When they would knock on the door, the answer would be, "Who's there?" and the person would say, "It is your King. Are there any complaints?"

In that way the British sovereign knew what his subjects were thinking about and what they really needed, or the needs that were apparent from their home conditions.

I think Miss Jones brought out the importance of the home visit in finding out the needs of the community as a whole, using those findings to work into a better program to better meet the needs of the people for the next annual program.

There is one other thing I would like to speak of: In the rural field we do not have many social agencies, or at least we do not know them as social agencies. They are there, but they are in the form of community resources, and can be worked into the program, and utilized as a social agency for the betterment of public health work as a whole.

I think the paper was excellent. I think it brought before the group the functions of public health nursing, how it works into a whole program. (Applause)

PRESIDENT BUIE: Is there any further discussion of this excellent paper?

MISS BEATTY (Chapel Hill): If there is a health officer left in the room who doesn't feel that the nurse has a full program, after Miss Jones has given so many different things the nurse has to do, I would like to have him go with her one day and observe.

Lay participation is effective in official agencies, as well as in private agencies.

Dr. Richardson takes the immunization clinics and the lay people help. The nurse does not make any attempt to go with him. We do organize the

clinic, and see that four or five people are there to assist. They are instructed previously. On those days we can go on with our work, and there is plenty to do.

In school clinics and pre-school clinics, our lay people assist. We haven't all communities organized, but we are getting them organized so that they help very effectively where they have been instructed what to do.

I do think that we can educate our people a great deal through our lay participation, and this lay participation will in turn help our commissioners to see the need of appropriating money, and that, I know is a big problem for the health officers. (Applause)

PRESIDENT BUIE: Is there any further discussion?

MISS GAVIN (Durham): I just wanted to mention our staff education. Miss Jones did mention it. We have carried out a full staff education program for some little time, but we could not possibly carry out the program and do the things that we have done had it not been for the backing of our health officer, Dr. Epperson.

While I feel, and I am sure every supervising nurse feels, that the staff education program is important, it is also important that our health officer help us, as Dr. Epperson has certainly done in our department. (Applause)

PRESIDENT BUIE: Is there any further discussion of this very fine paper? If not, I will ask Miss Jones to close.

MISS JONES: I think I have nothing further to say except that perhaps what I have said here wasn't needed in North Carolina. (Laughter and applause)

PRESIDENT BUIE: We will now have a paper by Dr. Sisk, entitled, "Diphtheria." Dr. Sisk is health officer in Waynesville, North Carolina. (Applause)

. . . Dr. Sisk presented his prepared paper. . . (Applause)

DIPHTHERIA

By C. N. SISK, M.D., Waynesville, N. C.

The milestones in diphtheria control related in proper sequence begin with the discovery of the specific organism by Klebs in 1883, its culture by Loeffler in 1884, the use of antitoxin in treatment and as a prophylactic in 1894, the application of the Schick test to determine immunity in 1913, and during the same year the administration of toxin-antitoxin as an active immunizing agent.

Credit accruing to the advancement made in the treatment and prevention of diphtheria is shown by contrasting a death rate of 3.3 per 100,000 in the registration area in 1934, with one of 43.3 in 1900, a case rate in North Carolina of 51.5 in 1935, with one of 309.0 in 1922.

The incidence of diphtheria is seasonal, appearing in the early fall, reaching its height in midwinter, and gradually disappearing with the com-

ing of spring. Whatever makes it seasonal in its occurrence may be exaggerated and result in an outbreak. Factors that encourage the occurrence of diphtheria are the presence of a particularly virulent strain of the organism with conditions favorable to abnormal conditions of the respiratory organs, such as chronic catarrh, and diseased tonsils and adenoids.

The history of the disease before and since the advent of immunization shows it to be endemic in the temperate zones, and to occasionally become epidemic.

During the five-year period immediately preceding 1936 there was an annual average of 38 cases of diphtheria reported in Haywood County, North Carolina, giving a case rate of 130.6 per 100,000 population, as compared with an annual average of 2275 cases in the State, giving a rate of 69.5. During the period, August through December, 1936, there were 136 cases reported in Haywood County, giving a rate of 446.4 per 100,000, and 1872 cases in the State, giving a rate of 46.4. During this period cases were reported in Haywood County by months as follows: August—5, September—28, October—56, November—33, and December —14. Cases were reported from all except two small townships in the county by 20 of 22 physicians in active practice. By age groups, 3 cases, or 2.28%, were under one year of age; from one year through the seventh year and evenly distributed by years, 91 cases, or 66.76%; from eight through fourteen years of age, 30 cases, or 22.16%; over fourteen years, with the oldest being 32 years of age, 12 cases, or 8.8%. Fifty-nine (59) cases were male, and 77 female; 133 white, and 3 colored; 41 were in school at the time of onset, 95 were not in school; 30 gave a history of contact with a case, 106 gave no history of contact; among 273 home contacts under 20 years of age, 66 gave a history of vaccination, and 207 had not been vaccinated; multiple cases occurring in homes: 10 homes had 2 cases, 4 homes had 3 cases, 1 home had 4 cases, and 2 homes had 5 cases; 30 cases had a record of Schick tests, 12 being positive and 18 negative; cultures were made on 63 cases, with 57, or 90%, being reported positive; 29 cases, or 21%, gave a history of vaccination three months or more before onset; two cases had been vaccinated previous to 1934, seven during 1934, 12 during 1935, and eight during 1936; two cases had been vaccinated twice during their life. Sixteen of those previously vaccinated had received alum precipitated toxoid, ten had received two doses of Ramon diphtheria toxoid, and three had received three doses of toxin-antitoxin. Seven cases, or 5%, resulted in death. The ages of fatal cases were: one—8 months, one—10 months; three—2 years, one—5 years, and one—6 years. One fatal case, the 6-year-old child, had been given 1 cc. of alum precipitated toxoid by a member of the health department personnel three months before onset.

Quarantine was established immediately upon receipt of a case report by a personal visit to the home. Isolation was secured when housing facilities would permit. Some subsequent visits were made, and quarantine was released upon a three weeks' time period without culture.

The records of the Haywood County Health Department show that 2782 children, or 10%, of the total population, have been vaccinated against diphtheria by the department personnel alone during the past three years.

Statistics provide uncontrovertible evidence of the prevention of diphtheria by vaccination, however, an amount of immunity in the body sufficient to protect under ordinary conditions may be overcome by contact with an unusually virulent strain of the organism. The low case incidence of diphtheria under one year of age is ascribed to (1) slight chance of infection, (2) acid reaction of the mucous membranes at that age, (3) inherited immunity from the mother, (4) slight development of lymphoid tissue which is so often the point of infection. We are told that from 80% to 90% of children born to immune mothers possess passive antitoxin obtained through placental transmission which is gradually lost, yet at the end of one year 60% are negative to the Schick test, while about the third year the number is less than 40%. About the fourth year the percentage of children with negative Schick tests increases, and at ten years of age the adult figure of 80% negative is approached. Because of the low incidence of diphtheria in children under one year of age, it is logical to reason that this is in large part due to the presence of antitoxin in the child's blood. Toxoid is administered for the purpose of stimulating the production of antitoxin. If antitoxin is already present when toxoid is given there would be no demand for stimulation, and the toxoid would remain inert. Later the inherited immunity in passing would leave the child susceptible while the mother relied upon the assurance of her physician or health officer that the administration of 1 cc. of alum precipitated toxoid at 6 months of age will eventually give a permanent immunity in most instances.

I shall continue to recommend the vaccination of infants at 6 months of age; however, I shall as vehemently insist that it be repeated at 18 months of age.

A charge of even 10c for a dose of alum precipitated toxoid, if its use is encouraged as it should be, will equal an amount more than the average health department budget will afford for this item. A charge of even nominal proportions by the health department for toxoid is embarrassing, violates the principles of free service by the health department, and retards its use to an unbelievable extent. Providing toxoid free of cost by the State to save the lives of helpless children is equally commendable to furnishing remedies for the treatment of syphilis in the substandard strata of our adult population.

President Buie: I will ask Dr. J. C. Knox, of Raleigh, to open the discussion on Dr. Sisk's paper.

Dr. J. C. Knox (Raleigh): Mr. Chairman, Ladies and Gentlemen: Dr. Sisk has raised a subject which I am sure will call for discussion on this particular occasion.

There has been considerable controversy raised recently relative to the efficiency of the various immunizing agents against diphtheria. Many who have advocated one preparation or another have felt a need to revise their thinking about it, and have more or less decided they know not exactly what they wish to advise.

I think Dr. Sisk's experience with diphtheria is not in keeping with what we have in North Carolina as a whole. I don't attempt to explain it, but it isn't in keeping with what we are finding in other sections of the state.

This year we are attempting to find out whether or not each case of diphtheria reported to the State Health Department has never received any immunizing agent, and what agent that was, and to determine also if there is a difference in the degree of severity of the disease in those who have had an immunizing agent.

We started this the first of the year, and we found that approximately fourteen per cent of the cases reported thus far have at some time or another received an immunizing agent, either toxin-antitoxin, Ramon toxoid or the alum precipitated toxoid.

Most of those cases that have been reported as having diphtheria following these agents have occurred in individuals in which the Schick test is not known. Only a few have had a record of a negative Schick test.

I might add here that the Schick test is a simple thing to give for one who has given many of them. It is not a simple thing to give for one who is inexperienced, and I sometimes wonder whether or not the Schick tests that are given are improperly given and therefore the individual giving them is unable to read the correct reaction. Oftentimes, the skin of the individual is so thin that it is next to impossible to get the material into the skin, and much of it, if not all of it, goes subcutaneously, and the test, of course, is a total loss as far as recording whether or not it is positive or negative is concerned.

The experience that Dr. Sisk has had is interesting and it would be interesting, of course, to observe if other sections, particularly the part of the State in which Dr. Sisk is working, have an experience similar to his. I think that from the figures that we have, we are justified in holding to our old recommendations for immunization, that is, that approximately eighty-five per cent of those immunized will be protected, and I think that we are justified in doing that until we have figures of sufficient number to make us alter that figure and to recommend some other procedure. (Applause)

President Buie: Is there any other discussion of this paper?

Dr. John H. Hamilton (Raleigh): Mr. President, I don't want to prolong the discussion particularly, but there are two rather disconcerting facts that Dr. Sisk brought out in his excellent paper. One is that we have presumably in North Carolina diphtheria bacillus with a Gravus strain.

This organism was first recognized in Europe, and only a few outbreaks have been definitely proved in this country. It is an organism which is capable of producing diphtheria toxin much more rapidly than the old Parke No. 8. It is not a better organism to produce antitoxin, but does produce diphtheria toxin much more rapidly than does the ordinary garden variety of diphtheria bacillus.

I am wondering if Dr. Sisk was successful in isolating a pure culture of the organism which caused his outbreak? If he was, I would like for it to be sent to someone who is competent to identify the type.

The thing that worries me even more than that is the effectiveness of the Schick test. We hear a lot of controversy now about the usefulness of the alum precipitated toxoid. Most workers who are following that train of thought are following the work of the Canadians, and I am much more worried about what the Canadians found about our Schick test than I am what they think they found out about our toxoid.

Of course, as to the point that Dr. Knox brought out: The Schick test in inexperienced hands, of course, is not dependable. The Schick test in Dr. Sisk's hands, I am quite sure, would be dependable, and I would like to have a little bit more information about who did those Schick tests.

The Schick test material now dispensed by the State Board of Hygiene is carrying about as much toxin as a Schick test can in safety, because it causes a pretty vigorous reaction in those children who have no diphtheria antitoxin in their blood, and if the negative Schick test by that outfit will not confer protection, about the only thing we can do is to have another Schick test which is to be given to those who have negative test by the present outfit, to determine just what is required to protect the child against diphtheria.

President Buie: Is there any further discussion of Dr. Sisk's paper?

Dr. Gray (Henderson): I just want to ask Dr. Sisk a question. I believe he stated that a certain per cent of his cases had been given the toxoid, and also a certain per cent had laboratory diagnoses of positive. I would like to ask if he knows how many cases, or what per cent of those laboratory diagnoses as positive diphtheria were in those patients who had been immunized?

Dr. A. P. Willis (Candler): I practiced medicine in Haywood County for eleven years. I do know that there was quite a difference, at that time, in the prevalence of diphtheria in Haywood and Buncombe Counties, and they are adjoining counties. I was doing general practice at that time, and when I left, for several years afterward, I noticed very definitely, for some reason—I never knew why, but often thought of it—that there was a difference, that the prevalence of the diphtheria in Haywood County was abnormal.

President Buie: Is there any further discussion?

Dr. Milton J. Rosenau (Chapel Hill): I didn't understand Dr.

Sisk's paper to be any discouragement upon the value of active immunization against diphtheria, but a study upon some of its details, for we well know in practice that in all these protective devices, these prophylactic things that we have, we do not obtain, nor do we expect to get, a hundred per cent prophylactic, sure, fool-proof protection.

In typhoid vaccines it occasionally fails, on exposure to massive doses of virulent typhoid pollution. In smallpox we occasionally have exceptions after vaccines. Some people get smallpox itself, three, four, or five times, and, of course, in diphtheria we do not get a hundred per cent. I am quite sure Dr. Sisk did not mean to throw a wet blanket or to discourage the use of this splendid, economical, and satisfactory method of controlling diphtheria.

This diphtheria prophylaxis, academically, theoretically, is very complex. We have different kinds of diphtheria, as Dr. Hamilton says: Gravus variety, which overwhelms the system all at once with a very massive amount of toxin produced quickly, before the antitoxin may be administered, has a chance to get in and neutralize it.

Then, whether one uses the Ramon precipitated, the toxoid or the toxin-antitoxin mixture, or the alum precipitated, it takes weeks and even months before the active immunity comes on. So that a child gets diphtheria infection a few months afterwards. We may not expect in all cases that the protection has come in that time.

There are many other important factors which should be studied out, and we have come to the point now where we have the gross results in wholesale, and we know it is an admirable public health measure, but we have come to the retail point where it is important, as Dr. Sisk is doing, to study out some of the mistakes and the failures.

Everyone has seen when hundreds of persons, especially children, are injected with a small quantity, a half c.c. or one cubic centimeter of this material, perhaps the syringe leaked and very little of it got in. Perhaps a lot of it ran out through the little puncture. There are fifty-seven different things that might happen to explain some of the failures.

Even when it gets in, some children produce their antitoxin, autogenous antitoxin, so much more slowly than others. And there is a small percentage in which the one course of treatment will not produce a Schick negative, a completely immunized child. So that with the Schick test, as Dr. Hamilton has so very well said, and Dr. Knox emphasized, we have, I think, a satisfactory method to determine whether or not our immunizing processes have been satisfactory and complete or not.

Thank you very much. (Applause)

President Buie: Is there any further discussion? If there is no further discussion, I will ask Dr. Sisk to close.

Dr. Sisk: I don't intend, Dr. Rosenau, to speak disparagingly at all of immunization against diphtheria. I believe in it just as strongly as ever. However, I am convinced that a condition can arise, a condition that I have experienced—I hope you won't experience; however I believe you are

subject to experiencing it—where all the rules of the game are more or less broken up.

Two years ago, in the vicinity of Raleigh, as a center, we had infantile paralysis. Fortunately, in the western part of the State, regardless of all the publicity we got, we didn't have infantile paralysis. Why did we have infantile paralysis throughout this area at that time when we ordinarily don't have it? Evidently, something occurred, as Dr. Hamilton said, some unusually virulent strain of the organism, or something, that caused us to have it.

I believe that that happened in Haywood County during this past year.

The adjoining county west, Jackson, one of the counties in the same health district with Haywood—the same amount of effort has been put forth in preventing diphtheria—had during this period only two cases of diphtheria, with a population two-thirds that of Haywood County. Buncombe County, the adjoining county east, with three times or more than our population, had its usual amount of diphtheria.

The doctor from Candler spoke about his experience in Haywood County. That is borne out in this paper by the statement that the average in Haywood County is, I believe, 130 cases per 100,000, as compared with less than half that for the State as a whole.

Dr. Hamilton, I did not make any attempt to isolate any pure culture of the organism.

As for the Schick test, the testing of these cases was done by myself, not claiming any unusual ability. However, I understand that a negative Schick test indicates an amount of immunity, an amount of protection, that may be overcome by a massive infection, or the presence of a particularly virulent strain of organism.

The doctor asked a question that I don't remember. Will you repeat it, please?

Dr. Gray: I was wondering if you could tell the per cent of cases or the number of cases of diphtheria occurring in these immunized persons that were positively diagnosed at the laboratory as diphtheria?

Dr. Sisk: No, I didn't keep my records in a way to do that, doctor. I am sorry. (Applause)

President Buie: The next paper on the program is, "Is Maternal Welfare a Public Health Responsibility?" by Dr. Bradford, of Charlotte. (Applause)

. . . Dr. Bradford presented his prepared paper, illustrated with slides. . . (Applause)

IS MATERNAL WELFARE A PUBLIC HEALTH RESPONSIBILITY?

By W. Z. Bradford, M.D., F.A.C.S., Charlotte, N. C.

The education of the public in the field of preventive medicine is accepted as the responsibility of the medical profession, particularly through the medium of the Department of Public Health. However, the

practice of medicine is distinctly not a legitimate public health activity. With the increasing interest being manifested in maternal welfare it is quite appropriate for public health officials to analyze and appraise their facilities as well as evaluate their own responsibility, if any, in this great movement.

In recent years we have seen through the medium of the lay press and various lay organizations a tremendous interest in the problems of maternal welfare and infant hygiene. Gathering momentum with the White House Conference under Mr. Hoover the movement for better obstetrics has resulted in such extensive investigations as that of the Commonwealth Fund in New York City, the Children's Bureau Survey of Fifteen States, and others too numerous to mention. The medical profession has taken a most active part in the campaign to make child bearing safer for both mother and infant. With the release of federal funds through social security legislation the respective state boards of health have been placed in the dual responsibility of discharging their obligations and at the same time instituting a policy of far-reaching implications. In Russia and Germany the pregnant woman is the charge and the responsibility if not the property of the state. In this day and time of increasing regimentation and bureaucracy, with the distinct threat of socialization of medicine on the horizon, it is imperative that public health activities and personnel maintain a strong bulwark of defense in the preservation of the individualism and independence that is the life breath of the progressive practice of medicine.

The North Carolina State Board of Health is to be congratulated upon its progressive maternal welfare and infant hygiene program. The illuminating investigations of the Bureau of Vital Statistics in their five-year survey of maternal deaths in this State focus attention on preventability. Preventability due to neglect, to ignorance, to lack of available facilities and preventability due to errors in medical judgment. This report should be placed in the hands of every physician in the State and given wide publicity generally.

The efforts of the State Board of Health in recent years to improve the midwife situation are well known to you all. The latest activity of the State Health Department has rapidly advanced during the past few months with the organization of 119 maternal welfare centers. All of them operate under the direction of local members of the medical profession. Over 3,000 women have been followed through their pregnancy in this brief period of time. Of great significance has been the far-seeing attitude of Dr. Cooper by which the practicing physician has been intimately identified with every one of these maternal welfare stations.

I wish to call your attention through the medium of the following statistical summaries to certain phases of maternal mortality in North Carolina. By these investigations it has been established that the responsibility cannot be placed on any one group. On the other hand no public-spirited citizen or group can evade their proportionate share of this responsibility, which is particularly applicable to the medical profession.

SLIDE NO. 1

North Carolina 1933

Total deliveries.....75,322
Midwife deliveries..... 33%
No prenatal care..... 50%
Maternal mortality rate 6.7/1000 births.

SLIDE NO. 2

Hamilton's Statistics
N. C., Raleigh, 1933

Maternal deaths studied..... 334

Puerperal albuminuria and Eclampsia	114	34.1%
Other toxemias	24	7.2%
Septicemia	51	15.3%
Hemorrhage	33	9.9%

SLIDE NO. 3

New York City		N. C.
2041 deaths		334 deaths
17.5%	Abortion	11.0%
25.0%	Sepsis	15.0%
9.7%	Hemorrhage	10.0%
12.0%	Toxemia	41.0%
Commonwealth Fund		N. C. Board of Health

SLIDE NO. 4

N. Y. State (Kosmak)		North Carolina (Hamilton)
285 deaths		268 deaths
39%	Sepsis	19%
24%	Hemorrhage	13%
23%	Toxemia	43%

Abortion, ectopic, non-puerperal causes not included.

SLIDE NO. 5

Hospital deliveries 6073.....(8%)
Maternal deaths in hospital.....43%
White maternal deaths in hospital.....50%
Toxemias hospitalized.....54%
57% of the maternal deaths in smaller hospitals due to Eclampsia.

SLIDE NO. 6

Charlotte Maternity Clinic—1932-1934

Total deliveries.....1076
Home deliveries.....1004
Spontaneous deliveries.....1038
Operative interference..... 38 (3.5%)
Colored 762
White 314
Stillbirths 51 (4.7%)
Maternal Deaths 7 (0.65%)
Syphilitics 198 (18%)

SLIDE NO. 7

Syphilitic Summary

	Misc.	S.B.	Living	Dead
0 Neo	8	13	34	38 %
1 Neo	2	2	19	17 %
2 Neo	0	0	11	
3-8 Neo	3	4	60	10 %
Neo and Bis.	0	1	41	2.3%

Total syphilitic cases 198.
Stillbirth incidence in treated cases 4.7%.
Chronic vascular disease 9.
Maternal deaths 2.

SLIDE NO. 8

Comparative Hospital Rates
Charlotte, N. C.
1931-1933

Mercy, Presbyterian, St. Peters
2,317 deliceries
Rate 3.0/1000
Good Samaritan Hospital
94 deliveries
Rate 95.6/1000

SLIDE NO. 9

Toxemia Summary
Eclampsia 11 (2 deaths)
Pre-eclampsia 23 (0 deaths)
Nephritic or vascular toxemia 51 (1 death)

There was no marked difference in the incidence of eclamptogenic toxemia in those cases under prenatal care. However, both eclamptic deaths were seen for the first time in convulsions.

SLIDE NO. 10

Cesarean Section (Duke End.)

Term	Del.	Deaths	Ces. Deaths
1932	7219	112	42 (37%)
1933	7731	100	31 (31%)

Cesarean Mortality 1932.....10.7%
Cesarean Mortality 1933..... 6.5%

SLIDE NO. 11

Cesarean Section Mortality

White	Hos.	W. & N.	Negro
1930	4.6%	14.0%	40%
1933	2.2%	7.7%	16%
	(137)	(313)	(25)

SLIDE NO. 12

Mortality After Cesarean
(Holland)

Not in labor	1202	1.6%
Early in labor	389	1.8%
Late in labor	220	10.0%
After induction	35	14.3%
Failure at delivery	107	27.0%

Gross mortality (H) 7.2%
Gross mortality NYC..... 6.1%
Gross mortality (D. E.).....10.7%

SLIDE NO. 13

Septic Abortion

Deaths 24
Operative 13
Retained placenta..... 8
Total sepsis deaths.....75 (22%)
(Deliveries and Abortions)
By physicians 62
Retained placentae..... 17

SLIDE NO. 14

Grace Hospital, Banner Elk
Del. 281, deaths 7, Tox. 43%

Baker Sanat., Lumberton
Del. 429, deaths 13, Tox. 61%

Rutherford Hosp., Rutherfordton
Del. 188, deaths 6, Tox. 67%

Apparently 57% of the maternal mortality in small D. E. Hosp. is due to eclampsia.

SLIDE NO. 15

Comparative Hospital Rates

Baker Sanatorium, 1931-33
Rate 30.3/1000
(Eclampsia 61%, P. Praev. 15%)
429 deliveries

Rutherford Hospital, 1926-33
Rate 32/1000
(Eclampsia 33%, P. Praev. 33%)
188 deliveries

Good Samaritan Hosp., 1931-33
Rate 95.6/1000
94 deliveries

SLIDE NO. 16

Operative Intervention

Total Deaths	334	
Operative	123	(36%)
Toxemia Deaths	138	
Operative	55	(40%)
Tox. Hos. Deaths	75	
Operative exclusive of forceps	32	

SLIIDE NO. 17

Sepsis

Delivered by midwife	13	
Delivered physician	38	
Operative (Forceps 4)	17	(44%)
Hemorrhage	15	(40%)
Retained placenta	9	

SUMMARY

On the basis of the above statistics several contributing factors to the North Carolina maternal mortality rate are apparent. First, the high incidence of pregnancy without prenatal care permits the progress of complicating pathology to a point that the situation is frequently grave before medical attention is available. This is especially true as pertains to toxemias of pregnancy, a condition that can be safely handled by intelligent treatment during its incipiency. Second, a study of the maternal deaths in hospitals indicates a high mortality rate following Caesarean section. This is explainable by an analysis of the deaths from toxemia and justifies the conclusion that Caesarean section is being abused by its too frequent employment upon the toxemia patient. Third, an analysis of the deaths from sepsis also reveals a high incidence following Caesarean section and raises the question as to the choice of the proper type of operation in these cases. The low cervical and Porro are recognized as having a greater margin of safety than the classical Caesarean section in neglected cases of disproportion. Fourth, a study of the deaths from septic abortion reveals a high incidence of operative interference and frequent manual removals of the placenta. Fifth, a study of the maternal deaths from hemorrhage indicates that transfusion was seldom employed.

While it is fully realized that extenuating circumstances and limited facilities were doubtless factors in many of these deaths and hence criticism is hardly justifiable, at the same time they serve to focus our attention in the majority of cases on preventability and hence responsibility. Adequate prenatal care for the indigent strata of society is probably the responsibility of the State through the medium of the Department of Public Health. As a responsibility of the State it becomes the responsibility of every citizen. Education of the public in the field of preventive medicine of which maternal welfare is a part is most certainly a responsibility of the Department of Public Health. In the discharge of this duty it is of utmost importance that public health officials realize the potential dangers of state medicine and hence limit their services in this movement to that portion of the public unable to afford the services of a private physician and discharge this duty where possible through the medium of practicing members of the medical profession.

The general hospitals of North Carolina have a definite responsibility when it is realized that 57% of the toxemia deaths and 50% of all maternal deaths occur in hospitals which only deliver 8% of the total birth rate. The

improvement of equipment and technique, insistence upon the generous use of consultation and an adequately trained staff are essential.

The physicians of North Carolina have also definite responsibility in the lowering of the maternal mortality rate. A more intelligent treatment of obstetrical pathology, hence better results, will be obtained by post-graduate obstetrical education and by willingness to employ competent consultation more frequently.

PRESIDENT BUIE: The discussion of Dr. Bradford's paper will be opened by Dr. G. M. Cooper, of Raleigh.

DR. G. M. COOPER (Raleigh): Mr. President, we have published the figures that Dr. Bradford showed there, most of them, in the public health bulletin, on the front page and back page and wherever we could. We have repeatedly called attention to those figures, not only from our own staff writers, but from Dr. Bradford himself and from other equally able writers, and we all agree that the illustration that he used there is right to the point. The State Board of Health concluded sometime back that to solve the problem we must in some way find a way to provide prenatal medical attention, followed through confinement, with competent medical attention, and also through the post-partum period. Therefore, I will not go into a resumption of any of the figures that Dr. Bradford has presented, except just one thing: In the Rex Hospital records in Raleigh for four years, they have found that 1,039 deliveries have been made and of the 1,039 there were 13 deaths, which of course, is a rather high maternal rate, but of the 13 deaths, only one had ever had the slightest prenatal medical service at all. They were brought in to the hospital, most of them, in an eclamptic condition.

I want to stress just a little bit what Dr. Bradford states about the necessity of keeping this work within the hands of the legitimate profession. As long as the present administration of the State Board of Health prevails, I think I am safe in saying that the purpose is just as clear and the objective just as fixed as previously in driving constantly forward toward the provision of prenatal medical service in some way, through confinement, and the post-partum, and in doing this through the practicing physicians of the State, the men in general private practice. That is one point that I want to emphasize. Naturally, the private physician is besieged on many sides by the fears of state medicine, by competition of one kind or another, by the inroads of the hospitals and the clinics of various kinds, and we can put ourselves in his position.

But at the same time, no young man today who cares anything for his future, graduates from medicine and looks about for a field to practice medicine in, would think of going to one of the larger towns if he could find one that did not have a modern health department. We give to physicians, we help them instead of taking away. There is nothing that a properly conducted health department takes from a practicing physician, but it gives him a great deal.

On the other hand, no modern health department can succeed for forty-eight hours without the support of the best men in the medical profession. Right there I want to emphasize another point that Dr. Bradford has used a good many times: That is that this problem of maternal mortality—and I can't speak of that without putting in infant mortality, because it is tied up with obstetrics every time—is divided between the profession, the practicing physicians on one hand, and the health departments on the other. I wish to go further than Dr. Bradford.

I want to take the same position here publicly, and I think the Board of Health and Dr. Reynolds will agree with me, that in the fight on pellagra back yonder in 1930, we viewed it as a medical problem. If you will remember, and just for a minute let me use the illustration of our warfare on pellagra beginning in 1923, the death rate from that disease was constantly rising. The Red Cross was giving them yeast and the agricultural people were promoting farming and feeding, both of which were all right. Our point was, and we went before various medical societies and the first time I appeared I was taken very skeptically, that it was a medical problem, that if we could get the pellagrans into the hands of the practicing physician in the community early, let him decide whether they needed yeast, or whether they needed food of other kinds, we would right then begin to make a dent in the pellagra death rate. We succeeded in getting that idea over, I think, a hundred per cent, and, since 1930, the death rate from that disease has been coming down.

Now we have started with the idea of developing the prenatal medical centers. We call them maternity and infant centers. As soon as funds from the Children's Bureau became available they gave us a great deal of latitude in budgeting our funds, and we are paying now around $1,400 or $1,500 a month to private practicing physicians to aid us in the conduct of these maternity centers. We have established today about 123—the last time I had time to stop and count up—in 43 counties.

It is based just as nearly as we can get it on the Charlotte idea, of their giving service, with the important exception that we cannot go any farther than to give them prenatal medical advice. Right there is a thought that Dr. Bradford has repeatedly made in public and in private: We find that our greatest handicap, and until the Charlotte people organized their delivery service, by utilizing the out-patient clinics and the Duke interns, they hadn't gotten far with it. But since then I have taken pleasure in repeating every place in this State which I have appeared before a medical group or any others to discuss this plan, that the city of Charlotte, so far as I know, for the last four years has had the lowest maternal death rate of any city of similar size in the United States. If there is another city of that size that has a lower rate, I do not know it. Therefore, the plan is bound to be right.

Our main need is the wholehearted cooperation of the physicians, and I think they should be paid for every bit of service they render. They

should not be responsible for giving free service, even though we confine our work in these clinics to indigent people. We want to try to get every patient into the hands of a private physician, for when the patient gets into the hands of the private physician the Board of Health has no more responsibility in the matter.

That is our responsibility: To provide some way for these patients who have no private physician, who have no money to give him—there are, I think, about fifty per cent of the people who have no private physicians, who would be able to go to a private physician and pay him, if they could be convinced of the necessity. I want to close right there with a little illustration that happened in the city of Raleigh last week.

A friend of ours was an expectant mother. Sometime back, three or four months ago, she asked my wife to have me bring her the prenatal literature that we distribute. In the last nine years we have sent out probably a half million letters, going directly to expectant mothers, sent only on request from the mother, the midwife, or the attending physician. These letters were included in the bunch, with a copy of the booklet known as "Prenatal Care" prepared by the Children's Bureau at Washington.

Last week, this woman stated in a group that she was getting along fine, but she wouldn't drink any water, said her doctor had told her not to drink any water, except just the barest quantity possible.

"Why," she said, "I have Dr. Cooper's book and it says 'drink about eight glasses of water a day.' "

This fellow was a Harvard man. He was one of the two men that have the largest obstetric practice in Charlotte. The other one has his own book. It is a good one, and he provides his own patients with it, which is a fine idea. This fellow says, "Well, Dr. Cooper has been out of practice so long that he doesn't know anything about it." (Laughter) That was that.

Of course, I take that good-naturedly, but there may be some truth in it. Listen to this: It worried my wife. I suggested to her that she tell this young woman next time she saw her, that her doctor had a perfect right to give her any advice he wanted, and in my opinion she ought to follow it. Every letter we have written is shot all through with the advice, "Go to your doctor." We can show you a bale of them, complaining that we say that so much we must get a commission from the doctors. That is one idea we have to combat.

This fellow should have told the woman that he had reasons for saying what he did, not undertake to lay the alibi on me.

I told my wife to tell this woman that was all right, to go ahead and follow his advice. He probably had a good reason, and he was a competent man or he wouldn't have given it, but that this copy of "Prenatal Care" that she had was written by a group of the ablest obstetricians on the American continent—and it was, each man, an authority in his own field,

wrote a chapter. I don't think there is any better publication to put into their hands. Right while they were talking about it, and my wife was passing this advice on—it was last Wednesday afternoon—the American Medical Association radio hour was announced. They said, "This talk will be on prenatal care." The fellow doing the talking gave the advice in a few minutes—four or five minutes—that he would recommend about eight glasses of water a day. (Laughter) You can imagine the dramatic results of that truth right there.

That leads me to the concluding point, Dr. Buie, and that is this: If we could get the literature that we have available into the hands of every pregnant woman in this State for three years, the maternal death rate would drop fifty per cent, if they had no other information in the world, provided they would read it and follow it.

The same thing applies to the infant death rate: To get the information on feeding and things of that kind.

Therefore, if one of our chief obstacles were removed, and if the medical profession could just see how we try to aid them in getting the patient into their hands and keeping them there, we would have warm support from everybody. We do not meet much antagonism on that score. But we do meet a good bit of indifference. If we could overcome that, it would be a great accomplishment.

I want to say in conclusion again that the work of Dr. Bradford and his group in this State should receive the hearty endorsement and commendation of this organization, and that we should, by every means that is fair, guard the interests of the legitimate practicing physician, just as far as is humanly possible, because without that element, public health work would be of little avail.

Thank you! (Applause)

President Buie: Dr. Bradford's paper is now open for general discussion. Does no one else wish to discuss this very fine paper?

If not, I will ask Dr. Bradford to close.

Dr. Bradford: Mr. President, in spite of the lack of discussion, I have two additional points that I want to mention: The first is this.

A few years ago, when our delivery service was organized at the end of the first year, we were giving prenatal care to approximately fifty per cent of the women delivered. Today we give prenatal care to approximately 96 per cent of the women delivered. Even these women have learned to come to the clinic when they first become pregnant.

The second point that I wish to repeat is that the tendency is to place the entire problem in the hands of public health work and prenatal care.

I think Dr. Hamilton's statistics, which I am sorry he has not emphasized enough in his own reports, have proven to us that no amount of public health activity and prenatal care is going to substantially lower a

maternal mortality rate kept high by injudicious Caesarean incision, and injudicious operative procedure in small hospitals.

Third, the great danger of a rapid mushroom growth of a proposition of this nature: Three thousand patients were handled in Dr. Cooper's prenatal centers this past year. I wonder what is going to happen when the 3,000 grows to 30,000 and when the 30,000 grows to 300,000. The implications here just go on and on. That is why I wish to re-emphasize the fact that I think it is the responsibility of the men who are handling these clinics, that no patients be taken at these clinics except those who are unable to afford the services of practicing physicians in those communities. (Applause)

President Buie: The next paper on the program is "Health Work in the Schools," by Dr. J. P. Davis, School Physician, Winston-Salem.

. . . Dr. Davis then presented his prepared paper. . . (Applause)

THE HEALTH SERVICE IN THE SCHOOLS

By John P. Davis, M.D.
School Physician, Winston-Salem, N. C.

The school health service discussed in this paper refers specifically to the program which is put into effect annually by the City Health Department of Winston-Salem. I shall endeavor not only to present the effective work performed, but also to point out the deficiencies of the health program in the schools of this city, insofar as we are able to detect.

The school health problem in Winston-Salem consists of maintaining good health in a total of around 16,000 pupils, divided among 11 white and 4 colored elementary schools and 3 white and one colored high schools. For this work the school health service staff consists of the city health officer, school physician and dentist, and five white and two colored nurses. For a school population of 16,000 this staff is inadequate, as designated by leading health authorities.

Pre-school Clinics. During each April and May every mother who can be determined to have a child to begin school in the following autumn is notified of the date on which the pre-school clinics are to be conducted. Approximately one-half of the prospective first graders appear with their mothers at the respective schools which they will later attend. The school physician and nurse are there to examine them thoroughly and to advise the mothers regarding the correction of any defects found. This examination consists of a tentative estimate of the vision by means of the "E" test type, height and weight, with calculation of the deviation from standard weight, percussion and ausculation of the heart and lungs, and inspection of the ears, mouth, nose and throat, the skin and the skeletal and neuromuscular system. An appraisal of the mental capacity and health habits is likewise made. Diphtheria toxoid and smallpox vaccine are administered at the clinics and during the succeeding weeks.

First-day Inspections. During the first few days following the opening of the schools, every child of the elementary grades is inspected for the purpose of finding and excluding any with a contagious infection or infestation. This consists of examination of the hair for pediculi, the skin and scalp for scabies, tinea and the acute exanthemata, and the mouth and pharynx for tonsillitis or exanthems. Also the presence of a satisfactory smallpox vaccination scar is determined.

First Grade Examinations. During the autumn months the first graders who did not visit the pre-school clinics are likewise examined, this time in the absence of the parents. The parents are notified by letter of whatever defects are found and are advised to visit their family physician or dentist.

Each year it is hoped that the attendance of the pre-school clinics be larger, so that the summer be used for correction of the physical defects found, especially for tonsillectomies and correction of errors of refraction. However, until now no very effective plan for making this attendance approach 100% has been found.

Examinations of Older Children. Similar physical examinations are made on all pupils of the seventh grade. Thirteen-year-old children present more visual and dental defects and fewer diseased tonsils than do the beginners. Interesting results are obtained by physical examination of repeaters and pupils in the so-called retarded grades. In a grade of 19 high school repeaters examined recently, six were found to have appreciable refractive errors, three to have definitely diseased tonsils, one to have moderately advanced pulmonary tuberculosis and five to be markedly undernourished.

Examination of all participants in athletics occasionally reveals a heart which should not be allowed the strain of vigorous exercise.

Examination of pupils with primary defects, injuries or psychic problems are frequently performed.

An ideal school health program would include a complete physical examination of every school child annually, but obviously this is impossible without the services of numerous health physicians.

Correction of Defects. During the months following these examinations, the public health nurses visit the homes of all indigent children found to have physical defects. She takes the child with a refractive error to a local oculist who volunteers to make an examination without cost. Glasses are purchased through the charity fund of the city treasury. Tonsillectomies are arranged by the nurses to be done in the tonsil clinic of the City Hospital, without cost to impoverished parents.

The proportion of defects which are corrected to the total number found has not been determined, but may be estimated to be from one-fourth to one-third. Many parents carelessly ignore the advice given by the school physician, some refuse to make the necessary financial sacrifice, while others actively oppose any efforts of the health physicians and

nurses to have their children's tonsils removed or eyes examined, even without cost to the parent. We know of no practical means whereby this handicap to the school health program can be overcome.

Diphtheria Immunization. In-as-much as between 70 and 75 per cent of six-year-old children show the presence of antitoxic immunity to diphtheria by a negative Schick test, every white child of the first grade, whose parent gives a written request, is given the Schick test. Colored first graders are given this test without a signed request of the parent. In 1936, 926 children were given this test, 22 per cent of whom yielded positive reactions. To these susceptibles was given diphtheria toxoid. If toxoid were given to every child at the most needed age, namely, six months, the percentage of positive reactors among the first grade children would be so low as to possibly make routine Schick tests in schools valueless.

Tuberculosis Work. The incidence of pulmonary tuberculosis among children of high school ages is known to be greater than among younger ones. The excessive home and school work and the extra-curricular, social and athletic activities which are forced into the daily routine of the yet immature high school student gives little time for rest, recreation and healthful development of their minds and bodies. This unfortunate condition is undoubtedly a predisposing cause of tuberculosis, and can be corrected only through action of educational officials.

An annual lecture and x-ray demonstration on tuberculosis is given by a physician of the department of health before the student body and teachers of each high school, with the purpose of teaching the elementary facts of the disease, its mode of spread and prevention, and the importance of the tuberculin skin test.

The Mantoux test is given to all members of the senior classes of the high schools whose parents give written requests, amounting to approximately 75 per cent. The usual proportion of positive tests obtained is illustrated by the results of 1937, when, of 316 Mantoux tests administered to white students, 46, or 15 per cent, were positive. Letters to the parents of the positive reactors explain the meaning of the result and advise examination and advice from their family physicians. For those who are financially unable to go to a private physician, arrangements are made by the tuberculosis health nurse for roentgenographic chest examinations at the Forsyth County Sanatorium.

Control of Contagious Diseases. Whenever a school child is reported to have an illness suggesting a contagious disease, the school physician or nurse visits the home and makes an examination. In case such a disease does develop while the child is in school, careful isolation and quarantine in the home are executed, and the children of the same grade are inspected daily until the period of incubation for the disease has passed.

Parent-teacher groups are instructed regarding the early signs of the contagious diseases and are urged to keep sick children at home or report to the health nurse any child who becomes ill at school. Radio health talks

regarding the prevention of contagious diseases are given frequently during the winter by the health officer, addressed especially to parents of school children.

Dental Work. Dental service is provided for elementary school children unable to pay private dentists. A practicing dentist is employed by the city to devote one-half of each school day to this work. The number of teeth extracted is usually greater in proportion to the number of teeth repaired or cleaned, due to the lack of time in which to perform the less urgent needs.

Health Training of Children. The training of school children in physiology and hygiene is certainly one of the most valuable, yet greatly neglected, phases of public school education. Considerable progress in health training has been made in the elementary schools of this city. Many energetic teachers direct daily morning inspections of their pupils, which stimulates much interest in keeping their bodies and clothing clean, teeth brushed and posture normal. Most children are very soon taught which foods are most nourishing and which are unhealthy.

The health training program in the high schools is still greatly lacking, especially in the vital subjects of sex physiology and the venereal diseases. It is obvious that these subjects can not be taught properly, and therefore should not be attempted, until the teachers themselves understand the facts regarding sex and venereal diseases, and are sufficiently tactful in their teaching to make right impressions on young minds, rather than excite mischievous curiosity and consequent harm. Little can be done until such a course is offered as a major in the teachers' normal schools, so that these subjects must necessarily be taught by one holding a certificate in physiology and hygiene.

Thus I have briefly given an outline of the school health program put into effect each year in Winston-Salem. It is hoped that its suggestions may serve as a help in the school work of other public health units and that its defects and inadequacies may be corrected by any suggestions which may be offered by this group.

Dr. Norton: Mr. President, I would like to suggest that we all have a chance to stand up a minute and stretch, before we go on with the discussion.

. . . A brief recess was taken at this point. . .

President Buie: Please be seated.

The discussion of Dr. Davis' paper will be opened by Dr. Thomas Ennett of Greenville.

Dr. Thomas Ennett (Greenville): Mr. Chairman, Ladies and Gentlemen: I think Dr. Norton's suggestion was made with good intentions, but almost amounted to a motion for adjournment. And, of course, I would feel better satisfied if it had amounted to that.

The paper presented by Dr. Davis, it seems to me, outlines a well-rounded program.

I had no idea that Winston-Salem had a program as complete as that. I think certainly that the other cities in the State can profit by studying the program that Winston-Salem has put on.

There are one or two points in his paper, of course, that I feel disposed to discuss because I am much interested in school health work. I might say here that it appears to me that if all health officers would get sufficiently interested in school health work and then go back a little and get the training schools to train the teachers to teach health in the schools, in the next generation very little would have to be done in public health outside of the schools.

If you think about it, public health is a matter of public education. Therefore, the school is a center about which public health should be placed, and if you start in with the first grade, teach the child the things that a child of that age can be taught, and follow him right on through high school, there is no information that I can think of that is of value to an adult that that child will not have obtained before he leaves high school. Even the matter of maternal and infant welfare work could be cut down seventy-five per cent if proper instruction were given to the high school girls.

So, after all, it seems to me that unless you do visualize the fact that your school is your chief point for attacking the problem of public health, you will have missed really your best bet.

Taking up the topics that Dr. Davis discussed, as I recall them, we will start in with the pre-school child: I have nothing to say about that, except that I think it is a valuable phase of the school work, but I think it is practically worthless unless the parent is present.

Then, when it comes to the matter of the grades to select which you will examine annually, different school physicians have different ideas about that. I notice in Winston-Salem they have examined the first grade and the seventh. That leaves a child from about seven years of age until he is thirteen before he gets repeat examination. That may be the very best way of dividing up the work. Personally, I like to do the first year and the fourth year. I have the feeling that you can accomplish more in prevention, getting hold of a child when he is about ten years old. At that time, if he needs a tonsil operation, it will be discovered, and in all probability an operation at ten years of age will prevent deafness at age thirteen.

Those are just one or two points that I wished to make. He probably can advance other arguments for the seventh grade, which would mean that the child that didn't have eyestrain at ten years of age would have it when he was thirteen. I think that is true. But, getting back to the discussion, I would say that the child at ten may have eyestrain that should be corrected, and he doesn't get hold of him until he is thirteen.

Looking at it that way, by and large, I believe that an earlier examination for the older child is probably preferable to the late examination, though every doctor, of course, who does the work decides that for himself.

He spoke about the matter of repeaters. I think that is an interesting question, as to just why a child repeats. There are so many factors that enter into it that I don't think anybody can put his hands on one single factor and say, "This is the greatest factor in our retardation." Of course, the mentality of the child is a factor that must be considered.

I remember not very long ago I had occasion to say that I thought eyestrain and diseased tonsils were material factors in retardation. A doctor friend of mine, who is editor of a medical journal, wrote to me and said that was the first time he had heard that the seat of intelligence was in the tonsils. (Laughter) I don't think I had ever heard it myself, but the point I was trying to make, of course, was that diseased tonsils means much absence from school, and I can easily imagine that much absence from school would tend to cause a child to repeat his grade.

In connection with that I could say this: that various school physicians have studied groups of children who are called bright children, and groups of children who are called dull children, or children who were repeaters, and it has been found that the scholarship of those that had no defects was very much higher than those who had such defects as eyestrain, diseased tonsils and deafness.

I recall figures in regard to one little study of that sort in which the school physician found four classes of the same grade in a single school. It was determined by the Superintendent of Schools that he would divide those classes into two groups: the bright children would be put into one group and the retarded children into another group. He had the physician study the physical condition of these children and in the bright group there were fifteen per cent of them who had defects, physical defects, while in the dull group, or retarded group, there were fifty-five per cent of them that had defects.

It seems to me that if we could take that as meaning just what it states, certainly it would mean that physical defects do play a part in retardation of the school child. By way of parenthesis, I think the State of North Carolina before very long—and probably other states as well—will try to do something about the repeaters. The repeaters are costing the State about three million dollars a year right now.

Thank you very much. (Applause)

President Buie: Is there further discussion of this very fine paper of Dr. Davis?

Dr. R. F. Yarbrough (Louisburg): In regard to repeaters, I don't know about your city children. They may be different than the country children, but of course everybody will admit that a physically-fit child is a brighter child and is taught more easily.

However, my experience has been that the repeaters do not repeat because of physical defects but because of their home environment. The crux of the whole thing is right there. If you haven't a good home environment, you are going to get a child who is backward, who is not going to be properly handled and who will not do the proper work.

PRESIDENT BUIE: Is there any further discussion?

DR. R. S. MCGEACHY (Weldon): Just recently we conducted in Halifax County a school tuberculosis clinic, in which we tested enough children to have read 8,000. We tested many more colored children than we did white children, but we read about an even number of white and colored children because we couldn't catch up with the colored children to read their reactions.

Of the eight thousand that we read, there were about 1600 that were positive reactions, and of those we x-rayed all but 98, I am thankful to say. I think we ought to pat ourselves on the back. I think that is a pretty good record. Of those, we had five white children who were recommended for hospital treatment, or sanatorium treatment, and seventeen colored children, making a total of twenty-two children out of the 1600 something positive reactions. There were about 100 in round number who were recommended for home treatment, white and colored.

Of the five white children, we have gotten three of them into a sanitorium. One of them is at home in bed for three months. One is pending admission to the sanatorium as soon as financial arrangements can be made. But we can't do a blessed thing with the colored children. Our little sanatorium is full. We have a waiting list there, and they have about a three or four months' waiting list at the State Sanatorium. We are terribly handicapped on that. I would like to know what the consensus of opinion of this body is.

We all know that tuberculosis between the ages of fifteen and twenty-five is not reduced; the death rate at that age has not been reduced at anything like the other ten-year periods. What are we going to do? How are we going to keep children from coming in contact with tuberculosis? I would like for that to be discussed. I thought somebody would be interested in knowing something about that clinic. This was just done with the school children of our county. We tested and we read 8,000, and of the 8,000 that were read there were about 1600 positive reactions. We had twenty-two that were recommended for sanatorium treatment, and about a hundred in round numbers for home treatment.

I will admit that I don't know exactly what to do with those home treatment cases and those that we can't get into the Sanatorium. (Applause)

PRESIDENT BUIE: Is there any further discussion?

DR. C. N. SISK (Waynesville): Mr. Chairman, I agree with Dr. Ennett's statement that the teacher is the key person in school work, that

the teacher should have a working knowledge of public health work in connection with the schools. The viewpoint of the teachers, possibly, should be studied.

Last year I was invited to join a group, the Western Carolina Teachers College for Revising the Curriculum. I was invited in on the health end of it. I presented my views of what should be done in educating teachers along health lines. Dr. Wells of State College was in the group. I stated that I thought that a course should be put in the schools to give the teacher such knowledge of the physical condition, sanitation, and so forth, so that she would know something about what it was all about.

Dr. Wells, when I got to about the middle of my remarks, said, "My God, what do you expect for $60?" (Laughter)

I wonder if that reflects the feeling of the teaching profession towards their cooperation in our school work?

President Buie: Is there any further discussion? If not, I will ask Dr. Davis to close.

Dr. J. P. Davis (Winston-Salem): I was informally asked to clarify one statement about which I will say that the school physician makes no home calls for diagnosis of any contagious disease at any home in which the family is able to employ a private practicing physician. I wish to thank Dr. Ennett for his very excellent discussion, and I am sure that there is nothing else that I can add.

Thank you. (Applause)

President Buie: Thank you, Dr. Davis, for that very fine paper.

The last paper on the program is, "A Preliminary Report on the Sanitary Findings from the New School Survey," by Mr. Warren H. Booker, State Board of Health, Raleigh.

. . . Mr. Booker presented his prepared paper. . . (Applause)

A PRELIMINARY REPORT ON THE SANITARY FINDINGS FROM THE NEW SCHOOL SURVEY

By Warren H. Booker, Director
Division of Sanitary Engineering

School sanitation in North Carolina is on the upgrade. Some of us may feel that, like the depression of a few years ago, it was at such a low ebb that there was no other direction for it to go, except upward.

This report should be considered as a progress report, as it embodies the results of the survey in only 93 counties. While the other counties have already completed their surveys, time did not permit tabulating these surveys in time to be included in this progress report. It is hoped to have a complete tabulation and report ready within a few weeks, but it is believed that the general facts revealed from the survey in 93 counties will be indicative of the results to be found in the one hundred counties.

Some of the encouraging high lights in this survey are as follows:

While six years ago 1,009 schools in the 76 counties surveyed at that time had no sewerage facilities whatsoever, not even privies, and while 47,041 school children were enrolled in these 1,009 schools, the present survey indicates that there are only about 114 schools in 93 North Carolina counties without sewerage or privies in any form, and in these 114 schools there is an enrollment of only 4,091 school children. This is a decided step in the right direction.

Now considering the other end of the sanitary scale, we find that 538 schools at the present time have city sewerage, as compared with 369 schools six years ago. This represents an enrollment of 277,918, against 212,007, and while 559 schools had some form of school sewerage six years ago, 610 schools now have some form of school sewerage. There are still to be found 2,584 public schools at which privies in some form serve as the only means of excreta disposal. These privies are serving approximately a quarter of a million school children, which is substantially the same number that were served by privies six years ago.

It would seem, therefore, that as health workers, after getting privies at a number of these schools which previously had no form of excreta disposal at all, we now have the larger problem of getting rid of these makeshift privies and getting water-carried sewerage in their place. Largely through Federal Relief agencies, those backward schools formerly without any form of excreta disposal have either been consolidated with other schools, or have been provided with the simplest form of excreta disposal, namely, pit privies.

The sanitary rating of these excreta disposal devices is also encouraging. Whereas six years ago approximately 400,000 school children had what might be rated as fair to good excreta disposals, now approximately 475,000 can be considered as having reasonably sanitary means of excreta disposal. And while six years ago over 3,000 schools had what you and I would unhesitatingly term bad, or at least questionable means of excreta disposal, now only about 1,379 can be so rated. Furthermore, while six years ago 336,000 school children were subjected to such exposures, this number has now been reduced to 178,506. And, again, those schools without any excreta disposal whatsoever have decreased from 1,009 to 114, and the enrollment in such schools has decreased from 47,041 to 4,091.

The matter of school water supplies likewise presents an encouraging picture. Six years ago we could find only 477 schools using municipal water supplies. Now there are 671 schools using city water supplies, and the tributary school population has stepped up from 243,248 to 323,724. Another encouraging feature is that the number of schools having no water supply on the school property has been reduced from 1,783 to 1,008, representing a reduction in school population of from 109,232 to 57,676.

A sanitary estimate of the character of these school water supplies is indicated roughly by the accompanying chart.

While time does not permit going into other sanitary features of our schools, such as heating, lighting, ventilation, seating arrangements, school cafeterias, or overcrowding, at the same time it is felt that a general picture of these two main features of sanitation, water works and sewerage, forms a very good index to the changes that have been taking place in these other items of school sanitation.

THE PERSONAL ELEMENT

One of the interesting features noted in making this school survey throughout the State is that the sanitary conditions at our schools are to a very large degree a reflection of the interest taken in such matters by those immediately in charge. It is surprising to note the difference in school sanitation in different counties supervised by different county school superintendents. It was very noticeable indeed that in those counties in which there were wide-awake, progressive school superintendents interested in matters of cleanliness and decency, even though there was every earmark of poverty, or at least insufficient funds, at the same time there was a remarkably higher standard of school sanitation, and better maintenance of sanitary facilities in these counties than was found in certain other counties where the county school superintendent seemed to display little or no interest in safe school water supplies, or sanitary school sewerage facilities.

Similarly, it was found that in individual schools, the school principal was a most vital factor in accomplishing results, even sometimes with the most meager means and meager facilities for accomplishing such work.

Again, it was found that individual teachers seemed to be able to impress the stamp of their own personality and their own character on the character of school sanitation found at individual schools. This was particularly noticeable in some of the one-teacher colored schools where even the simplest and crudest forms of school privies are kept unbelievably clean, even to the extent of seat and floor scrubbing almost daily.

Finally, it was found that the humblest worker in our great school system, the school janitor, could and was accomplishing truly remarkable results, regardless of the principal or superintendent supervising his work. All credit to these "unsung heroes" who are working sometimes long hours, and are perhaps among the poorest paid on our entire school program. The maximum state salary, as we understand it, does not exceed $42.50 a month for janitors, and the hours of service are often necessarily long, frequently ranging to ten and twelve hours a day.

GETTING SCHOOL SANITATION

It is unnecessary to call the attention of this audience to the difficulty of getting even a passable school sanitation with our present school set-up. But to briefly review the situation, it might be well to recall that according to statute the school committeemen in each school district are respon-

sible for the school water supply and the school sewerage. As a practical matter, it is found that more often it is the Parent-Teachers Association that takes the initiative and really does things, rather than these school committeemen. Oftentimes the school committeemen wait apparently to be prodded along by the Parent-Teachers Association, which they interpret to be public opinion, or public demand, and they seem perfectly willing to defer any action until this public opinion or demand for improvement is expressed in unmistakable terms.

Another practical feature in this matter of securing improvement in school sanitation, regardless of the statute, is to be certain that before initiating any further movement for better school sanitation, the endorsement and cooperation of the school principal are secured. It is often a fatal error to endeavor to go any further, unless the backing of the school principal is obtained, for the reason that all too frequently this school principal has already been making requests for additional class rooms to his building, or an additional auditorium, or a gymnasium, or a playground, or something of this kind, rather than a new and safe water supply, or an improved sewerage system, and for that reason, unless the school principal is thoroughly "sold" on the proposed sanitary improvement, the further efforts of the sanitarian or health worker scarcely get him to first base.

After the school principal is "sold" on the idea of needed sanitation at his school, the next step is to "sell" and get the active support of the county superintendent of schools. It must be appreciated that this poor man is very limited in the matter of funds at his command, but he is wholly unlimited in the demands of every school in his county for improvements, enlargements, and additions. This unfortunate county superintendent must be enlisted to go with you before his County Board of Education to make requisition on the appropriating body, the County Commissioners, for funds with which to make the needed improvements.

Assuming that the health worker has "gotten by" the school committee, the school principal, the county superintendent, and the county board of education, and has secured the appropriation from the county board of commissioners, the sanitary improvement is far from being installed in a satisfactory and acceptable manner. Oftentimes the work is turned over to very inexperienced workmen, with little or no supervision, certainly no trained supervision, and the outcome is frequently very disappointing, to say the least.

GOOD PRACTICE STUDIED

As sanitarians and health workers, it was felt that this school survey should afford a good opportunity to make some definite determinations in regard to just what should constitute not necessarily good school sanitation, but at least reasonably good school sanitation. To this end, in making this survey some attention was given to the matter of inexpensive, serviceable, and at the same time fairly satisfactory methods of handling school sanitation. As may be expected, this is no easy job, particularly in view of

the very limited funds available for such work. Time forbids discussing more than just a few items in this connection.

One of the things which this country needs, besides a good five-cent cigar, is an inexpensive small commode suitable for school children in the first and second grades. Such a commode should be approximately ten inches in height. Then there should be an intermediate commode having a height of approximately twelve inches for children from eight to twelve or fifteen years of age, after which they can probably be expected to use the standard adult height of commode now on the market. If school commodes and privy seats can be made to such heights, it is felt that much of our trouble with gonorrheal vaginitis among our small school girls will disappear.

Another matter in connection with this item of commodes is that these commodes should be of the integral seat type, that is they should have no wood seat or lid whatsoever. Formerly, it was the practice to use this type of seat only at prisons, and at a few of our state institutions where the prisoners or patients were likely to tear off or destroy the seats and lids. The practice of using these integral seats is coming rapidly to the front in school buildings, and is to be highly recommended. The advantage of using these seats is that there are no movable seats or lids to become broken, to become loose, or to become soiled. It is very difficult indeed to stand on this type of seat, as, unfortunately, is often done in schools under poor supervision. Furthermore, this type of seat is invariably white, and shows up filth very readily, and, likewise, can be very easily cleaned. One theoretical objection may be advanced against the integral seat and this possible objection the speaker has found is not of any practical importance —that is that this seat might be cold to the user. Fortunately, while a very slight objection, this is not a serious factor at all, and the many advantages of the integral seat far outweigh this slight disadvantage.

Unfortunately, however, the price of this commode with an integral seat is higher than the usual commode with seat and lid, and, furthermore, this commode is made in only one height, that is the standard height. It is to be hoped that manufacturers will soon bring out a primary size, having a height of approximately ten inches, and an intermediate size, having a height of approximately twelve inches, in addition to the standard height commode of this type which is around fourteen or fifteen inches. In the meantime, the only practical suggestion found to meet the present situation in regard to height is to construct some movable platform or step to be used in front of these commodes.

The day of the pneumatic water tank for school use is passing very rapidly. The difficulty with pneumatic tanks is that the water pressure varies over such wide ranges, and in the second place there is ordinarily a very small volume of water available, even at comparatively wide pressure ranges. For instance, it can readily be shown that a pneumatic tank, when first filled with air under atmospheric pressure and then pumped up with

water, delivers only about 20% of the capacity of the tank at pressure ranges between forty-five pounds per square inch and twenty-five pounds per square inch. This wide pressure variation is ordinarily sufficient to cause unregulated drinking fountains to spout their water out of all bounds, or else to be such that the children have to suck the bubbler, if indeed they get any water at all. Fortunately, a number of schools are finding that inexpensive and very reliably low gravity water supplies can be provided whereby instead of using only 20% of the available storage, 100% of the available storage may be used, and instead of having such a wide pressure variation, the water pressure will be very constant, requiring no regulating equipment. Inexpensive cypress wood tanks of from two to four thousand gallons can be secured from the mail order houses, and elsewhere, at very reasonable prices. These tanks can be mounted on comparatively low wood towers. In fact, a few schools have located very satisfactory tanks on approximately twenty foot wood towers, the essential post members of which can be secured by cutting four logs approximately 25 to 30 feet in length, creosoting at least the lower end and planting so as to form the supporting posts for the water tank tower. Such a tower and tank can ordinarily be located comparatively close to the schoolhouse so as to require a comparatively short run of large pipe to the sanitary features of the school building. Of course, better and more durable tanks and towers may be secured in steel, it being our information that there is on the market a five thousand gallon tank mounted on a forty foot three legged tower which comes practically assembled, requiring the use of only a few bolts. The cost of this five thousand gallon tank and tower is between $500 and $600, erected in place.

Time forbids mentioning more than one or two other features, among which it might be stated that the State Board of Health is making experiments in an effort to reduce the cost of school sewage treatment plants, with some promise of success.

More or less satisfactory toilet paper facilities may be had by using devices whereby only one sheet of toilet paper may be removed at a time.

Angle jet drinking fountains of proper design are far superior to individual drinking cups.

Ordinarily, tile floors should be used in the toilet rooms, instead of concrete, at least around the commodes and urinals, to reduce odors of urine. Usually toilet room floors should drain to the urinal in the boys' toilet, and to a floor drain located at some point other than in the center of the room, in the girls' toilet rooms. A short length of hose attached under the lavatory near the door should be provided in every toilet room to permit flushing the floors.

Inasmuch as every feature of school sanitation is subject to violent abuse, the ultimate success of an adequate school sanitation program in any school narrows down very largely to the personal equation. This involves not only the county superintendent of education, but also the

individual school principal, teachers, and janitors. As better and more modern sanitary features are added, correspondingly better personal supervision should be exercised over the maintenance and operation of these features.

BETTER SCHOOL ADMINISTRATION

All of this in turn brings us up to the problem of better administration. The speaker has long held the opinion that inasmuch as the State has made such a success of the state highway system, and has later taken over the county highway system, as well as the Prison Department with equal success, and inasmuch as the State has made such an excellent record with the operation of our school system, it is only logical to believe that by continuing this same principle of making some one board or individual responsible for our physical school plants, as in the case of our highways and prisons, a marked improvement in economy and efficiency could be obtained over that of the present hodge-podge system as already outlined.

Unfortunately, in the past the magnitude of such an undertaking by the State may have been almost overwhelming, but now with the passing of the depression, the improvement in the State's finances, and with some improvement in school sanitation, together with a further reduction in the number of schools by way of consolidation, it would begin to seem that the day when the physical school plants of the State could be definitely charged to the responsibility of some one individual or some one board to be handled on a much more efficient basis, similar to that on which our highways and prison camps are now handled, may not be far off.

The paramount importance of school sanitation in any well rounded, long range public health program cannot be overlooked. The sooner we can get all, or practically all, of our schools provided with reasonably adequate water-carried sewerage, and with reasonably safe drinking water supplies, the sooner we are going to have our homes and municipalities more adequately provided with running water and water-carried sewerage, regardless of whether this matter of the physical school plants is taken over by the State now, or later, or never, it is the speaker's opinion that far-seeing health workers who have a vision of health work occupying its proper status from ten to twenty or thirty years hence, will not overlook a single opportunity of improving school sanitation where it will not only teach lessons which will be carried home to educate parents sadly in need of sanitary education, but where it will educate the future citizens, more especially those making up our Boards of Aldermen, our County Commissioners, and our State and National Legislators in the generations to come.

President Buie: The discussion of Mr. Booker's paper will be opened by Dr. Epperson of Durham.

Dr. J. H. Epperson (Durham): Mr. Chairman, Ladies and Gentlemen: I think Mr. Booker has presented a very splendid paper, and I think it is in order that he and the State Board of Health should be congratulated

for doing this very splendid piece of work. There is no doubt in my mind but what very excellent results will come from it, particularly in those counties where school sanitation is bad—and Mr. Booker tells me that there are some. Perhaps in some of our own counties conditions are not as good as they might be. I know I have certain conditions that I would be mighty happy to have rectified if I could.

There is one point that Mr. Booker brought out that I thought was very excellent, and that is that the degree of sanitation prevailing at a school usually depends upon those immediately in charge. I know you people have made that observation, too: that where you have indifference of the school folks, quite frequently you are going to find bad sanitary conditions—the toilets are not clean and various and sundry other conditions, which should not be tolerated.

I am speaking now of the sanitary conditions, not of the construction of the school building, the plumbing appliances and water lines, and so forth. I know of one or more schools in Durham County where this sort of situations prevails: They have city water. The water line feeding the school takes care of the drinking fountains as well as the plumbing appliances. At recess, when the toilet facilities are in use, the water at the drinking fountains that they have will not bubble over the drinking orifice. The children rush to those fountains. Of course, you know what happens. They might as well have a common drinking cup.

If we had the proper arrangement perfected through the State Board of Health, or through the State Board of Education, or whatever organization we might want to have handle it, so that construction and all those sorts of things could be passed upon before a building is erected, I am sure we would have a good many conditions eradicated that now exist.

In a good many schools you find types of drinking fountains which I believe should not be used. Pressure is inadequate at times, will not remain constant, and if we believe what we have taught, that diseases are spread by common drinking receptacles, etc., certainly those drinking fountains, it seems to me, ought to be ruled out of existence. (Applause)

President Buie: Is there any other discussion of Mr. Booker's paper? This is a very fine paper. Does anyone else wish to discuss it? If there is no further discussion, I will ask Mr. Booker to close.

Mr. Booker: Mr. Chairman and Gentlemen: I want to emphasize one of the points that Dr. Epperson brought out, that is, in regard to water pressure in the schools varying from a high pressure to a low.

We have been having no end of trouble with architects wanting to put in pneumatic tanks for water supplies for our schools. That is just as wrong as it can be. A pneumatic water tank for individual family use is the finest thing that has been invented thus far for the individual residence. But it is plumb all wrong for a school. At schools, during recess and at noon, we have a tremendous rush of water consumption, a tremendous rush to the toilets. All the toilets are filled, sometimes, and we have seen them on the

waiting list sometimes. That makes an enormous demand on the water system, and with these pneumatic tanks it can be shown that, say, a thousand gallon tank really has only 200 gallons under available pressure, bearing between 45 pounds at high pressure and 25 pounds at low pressure —only twenty per cent of the capacity of that tank. That is to say, only 200 gallons out of that thousand gallon tank are really available at usable pressure. Forty-five pounds is too much, and the fountains squirt all over the floor, and over the user's face. Frequently, lower pressures are such that children suck the bubbles.

The architects have been responsible for this because they are following the same design with the schools that they would with the individual family. Where you health officers and health workers can help us out is in referring those cases to us where you happen to know that a new school house is going in because we would like to show that architect how to get better results in his water supply by using a gravity tank rather than a pneumatic tank, and at much less cost and far better service, after the installation is made.

I might add that I have left out a lot of material in my paper, such as maintenance, and other features that we have learned during this survey, in the way of use of integral seats, and split seats, and low seats instead of the standard high seats, how toilet paper, towels, soap and things of that kind can be dispensed reasonably satisfactorily—but progress is being made, although there is still a long way to go.

I think, in general, folks, these statistics show that we are moving. We are moving in the right direction and what we need to do now is to step on the gas just a little bit more.

I thank you. (Applause)

President Buie: We will now have the committee reports. Dr. Carlton tells me that the Resolutions Committee is not ready to report, and immediately after this meeting he wants Dr. Hudson and Dr. Rhyne to meet in this corner.

Is the Nominating Committee ready to report?

Dr. C. N. Sisk: Mr. President, the Nominating Committee wishes to report the nomination of Dr. M. T. Foster, Fayetteville, for President, Dr. J. A. Morris, of Oxford, Vice-President, Dr. A. H. Elliott, Wilmington, Secretary-Treasurer.

President Buie: You have heard this report. What shall we do with it?

Dr. McGeachy (Weldon): I move it be accepted.

. . . The motion was duly seconded. . .

President Buie: Are there any nominations from the floor? If not, all in favor of this report let it be known by saying "Aye." I am glad to say that Dr. Foster, Dr. Morris and Dr. Elliott have been elected.

Is there anything else to come before the meeting at this time?

Dr. C. C. Hudson (Greensboro): Mr. Chairman, we have an American Public Health Association, which is our national organization. Quite a number of the men present are members of that Association. This automatically entitles those men to membership in the Southern Branch of the American Public Health Association.

The Southern Branch of the American Public Health Association—as you men who met with the organization in New Orleans know—has as its president Dr. Rigley of Virginia. Dr. Reynolds is a member of its Governing Council. Recently, I received this communication: "In accordance with the By-Laws of the Southern Branch of the American Public Health Association, a member of the Governing Council for each state in the Southern Branch territory appoints a representative from their state to the Membership Committee. Dr. Reynolds has appointed you to the Membership Committee to represent North Carolina."

Along with this, we also have this communication in regard to associate membership in the Southern Branch of the American Public Health Association: "Persons who are not members of the American Public Health Association, but who devote their entire time to public health service, may become members of the Southern Branch of the American Public Health Association upon the payment of $1 per annum. These persons will receive annually copies of the proceedings of the Southern Branch of the American Public Health Association."

The Southern Branch of the American Public Health Association meets annually at the same time that the Southern Medical Association meets, and this year the meeting will be held in Baltimore on November 17 and 18. So that any of you men who would like to become members of the Association, the Southern Branch, and who want to receive the report this year, we will be glad to take your membership application. I will leave these application blanks here at the desk, and we would like for a number of you to join. You can leave the blanks with Dr. Elliott, the Secretary of the Association, or you can mail the blanks to Dr. McGuinness, Dr. G. Ford McGuinness, Secretary of the Southern Branch at Richmond, Virginia.

I hope that a good many of the men who are not members will start on their way toward membership in the American Public Health Association by way of the Southern Branch. (Applause)

President Buie: All those who are interested in filling out these blanks will please do so when we adjourn.

If there is nothing further, we will stand adjourned.

. . . The meeting thereupon adjourned at five-thirty o'clock. . .

MONDAY EVENING SESSION

May 3, 1937

The meeting convened at seven forty-five o'clock, President Buie presiding.

PRESIDENT BUIE: At this time I want to ask our new officers to stand and be introduced.

Our new President, Dr. Foster of Fayetteville. (Applause)

Dr. Morris, will you stand? Dr. Morris, our new Vice-President. (Applause)

Dr. Elliot, our Secretary. (Applause)

We have some distinguished guests in the audience tonight. One of them is a native North Carolinian who went to another state and made a name for himself, but he always likes to come back to North Carolina on visits and we are always ready to have him come back. I would like Dr. John Farrell of the Rockefeller Foundation to stand. (Applause)

Is Dr. Strosnider here? (No response)

I recognize Dr. Wingate Johnson of Winston-Salem, our incoming President of the State Medical Society. (Applause)

I shall now ask Dr. Carl V. Reynolds, our State Health Officer, to introduce our guest speaker.

Dr. Reynolds! (Applause)

DR. CARL V. REYNOLDS: Mr. President, Ladies and Gentlemen: It gives me a thrill, a deep sense of appreciation in that I can introduce Rosenau of North Carolina (laughter) rather than Rosenau of Boston. (Laughter) Massachusetts' loss is North Carolina's gain.

It would be absurd for me to even attempt to give you any idea of what Dr. Rosenau has accomplished. Every child in America knows that Columbus discovered America. Every child of medicine knows that Dr. Rosenau is the Columbus of preventive medicine.

It is a wonderful thing to have Dr. Rosenau in North Carolina. It is a step forward in the prevention of disease and the preservation of health. When history records his many accomplishments he will be, as is now recorded, a Jenner. There are not many others, I will say, who will go down in history as Rosenau will. There is no doubt about it, gentlemen. Chapel Hill, in having Dr. Rosenau at the head of the School of Preventive Medicine, is an advancement for North Carolina and the Second District, including nine states, who are advancing fast in their personnel of health workers due to the directorship of Dr. Milton Rosenau.

He has a subject for you this evening. (Laughter)

QUESTION: What is it?

DR. REYNOLDS: Don't ask me, I will never tell you. (Laughter) I don't believe anybody else in this audience can tell you. I know a couple of the doctors have a bet on it. I believe some money is going to be lost, because they are both bluffing.

So I will retire now to allow you the pleasure, the distinct pleasure, of hearing Dr. Rosenau. (Applause)

DR. M. J. ROSENAU: It was the lore of men like my chief, Dr. Carl

V. Reynolds, in an organization such as this, and the spirit of the state that enticed me to North Carolina, and I want to thank you, sir, for introducing me as of this State, for I really have tar on my heels. (Laughter) And I want my roots to sink deeper into the soil.

I want to make a little confession. A few weeks ago I had a dress rehearsal on Serendipity. In other words, I tried it on the students in Chapel Hill. Two of them were standing with their backs to the bulletin board and as I went by I heard one of them say, "Serendipity, what the hell is that?" (Laughter)

And the other one, a co-ed, said, "I guess the Old Man has discovered another virus or something like that." (Laughter)

Anyhow, whatever it means it serves the purpose of an after-dinner talk on a pleasant occasion like this. It is a vehicle for a few thoughts. Again going back to my students at Chapel Hill, I asked them in an examination to name the important vehicles of infection, and one of the answers was, "Automobiles." (Laughter and applause)

I am a little surprised at the response. (Laughter) All right, Dr. Elliot. I assure you it is a pure, unadulterated word. It is in the dictionary—some dictionaries—as our President, Dr. Buie, has discovered.

You are always supposed to tell three stories, so here is one more. A Sunday School teacher asked her class to speak the Ten Commandments and called on Johnny. Johnny got up and gave them letter perfect, but left out one.

She said, "You left out one."
He said, "Yes'm."
"Well, which one did you leave out?"
"Number 7."
"Don't you know it?"
"Yes'm."
"Well, state it."

She couldn't induce that boy to say it. Another little boy at the back of the room raised his hand and said, "Teacher, I know why he won't say it. His father was convicted yesterday of doing it to milk." (Laughter)

We had better get on to the serious part of this new virus disease before we all become infected and die. I suppose that very few people nowadays read Horace Walpole. Walpole lived a long time ago and was an inveterate letter writer. If you go to the library, you will find sixteen volumes of his letters which have been published, big thick volumes. They lie on the library shelves collecting dust. If you take down Volume 3, and turn to page 204, in the second paragraph, you will find a chatty letter which he wrote to Horace Mann in which he told a silly fairy story, one that he had heard once, about three princes of Serendip.

Serendip, I may say right at the beginning, is the name that Marco Polo gave Ceylon in the days of Genghis Kahn—Serendip.

These three princes went about the world seeking adventure and making discoveries, by accident and sagacity, of things they were not in search of. That is the real definition of the word. Horace Walpole, then and there, out of the name "Serendip" which is the old name for Ceylon, gave us the word Serendipity, which means people who go about the world adventuring and making discoveries by accident and sagacity of things they are not in search of.

About a year ago, when I was thinking about this theme, I wrote something out, and when it was in rough manuscript I gave it to my friend Zinsser to read. He looked at it sort of dubiously. I said, "Zinsser, if you will look in the Good Book, you will find Kish commanded his son Saul to arise, go forth and seek the lost asses. Saul arose and went to seek the lost asses and found a kingdom."

"Well," said Zinsser, "if Serendipity is seeking lost asses and finding a kingdom, then my life has been spent in anti-Serendipity." (Laughter) For, he said, he had spent his entire life in seeking a kingdom and only found lost asses. (Laughter)

As to the princes of Serendipity, the chief example of all time is, of course, Columbus. Columbus ventured forth. He made a discovery by accident and sagacity of something he was not in search of. Columbus made four voyages across the ocean and died blissfully ignorant of the fact that he had discovered a new world. An entire continent blocked his way to the Indies. He thought he had found a short way, another way of getting to the Indies, and we still call the aborigines Indians, as a memorial to that mistake. Nobody cares about Columbus' blunders, nobody cares nowadays about his motives, which were of course for gold, and power and wealth. Nobody cares about his mistakes, or that he found something by accident and sagacity, if you will, that he was not in search of, because he sailed, he ventured, he did, he dared, or he never would have accomplished what he did.

Many a scientist sails uncharted seas as Columbus did, to find a land unsuspectingly, with no notion that it existed there—he charted his course in a certain direction but found a harbor that proved to be a haven, even a heaven, for him. But only those who do and dare, only those who quest and question, only those who try and work, bring home discovery in their cargo. Laggards drift by ports of opportunity, and of course never achieve anything even in the land of Serendip.

There are those detractors who sadly misunderstand the prince whom we place upon a pedestal in the field of bacteriology and preventive medicine, namely, Louis Pasteur. They say that he blundered by accident on those wonderful discoveries that he made. There is no general agreement as to which one of Pasteur's many achievements is the outstanding one. There are those who say his early work in crystallography was the best that he ever did. Others say his work in putrefaction was the best, which of course led immediately to Lister's discovery of asepsis and antisepsis

in modern surgical methods; others think his work in controlling anthrax or the prophylactic treatment of rabies, and so on and so forth; perhaps his work on silk worms in saving the silk worm culture for France. There is no general agreement.

It seems to me that nothing he ever did was of more direct value to prolonging the life and easing the suffering of mankind, nothing he ever did excelled the work that he did with tartaric acid when he was only a student—with right-handed tartaric acid and left-handed tartaric acid. He made a solution of the two and he had acetic acid. He solved a puzzle that had worried chemists and physicists for many years. I know, if you read his life history, you will see that crystallography and that kind of chemistry was really his first love throughout his life.

While there is no general agreement as to the outstanding contribution that Pasteur gave us, there is, as Dr. Pierce pointed out long ago, unanimous agreement as to the outstanding thing he said. He said, "Chance favors the prepared mind," and that is the keynote that solves this whole question that we are considering tonight: in the discoveries by accident in the land of Serendip chance favors the prepared mind.

Let's see what we mean by that. It is said that Archimedes discovered specific gravity when he noted the buoyancy of his body when he was in the water. You all have heard the foolish story of how Newton, Sir Isaac Newton, while lying on the grass found the great laws of gravity by seeing an apple fall. And James Watt, dozing before the fire, watched the steam lift the lid of the kettle, as a result of which we have the steam engine.

Tom, Dick and Harry see and do these same things. Tom takes a bath, but doesn't discover anything about the laws of gravity while he is doing it. He may get a little cleaner. (Laughter) Dick sees lots of apples and other things fall, but that doesn't register anything special to him. Harry sees the steam lift the lid of the kettle without carrying that thought any further. In other words, it is only the prepared mind—in the sense that Pasteur mentioned—that makes discoveries, not by accident but by sagacity and through devotion to work, the kind of inspiration that means perspiration, real work in the field.

We have, however, instances, well authenticated, in which great contributions have come as an inspiration suddenly to persons doing something else, or perhaps waking out of their sleep, they have to be quick to write down the dream they have had, and so forth, before it fades, as dreams will fade.

Kekule, dozing before the fire, saw the benzene ring, and what could we do in organic chemistry without that wonderful conception?

Decarte is said to have evolved the whole system of coordinate geometry while asleep. And poets, musicians, artists have thus conceived great inspirations, but when you come to look into it and think about it, poems, poetry, are written only by poets whether awake or asleep. Music is composed only by musicians in any part of the twenty-four hours, and great

artistic creations only come from those who are inspired in this sense. While it seems like a moment's inspiration that came out of the blue sky, while it seems an accident, in the sense of Serendipity it is because their minds have been prepared, and their minds have been prepared only through the one master word, and that is, work.

So that many symphonies, pictures, gems of song, poems and other great artistic creations have so been given to the world. Every bacteriologist knows of Gram's method, gram-positive and gram-negative bacteria. That was an accident, so-called, in the realm of Serendipity. Gram was trying to get a differential stain by which he could tell the casts in a kidney from the nuclei in the kidney structure, and in doing so happened to put his slides into an iodine solution, and so on. Without going into all the details of it, he did not throw those slides away as something that was spoiled, something he wasn't looking for. He was keen enough to say, "Oh, what is this?" He looked into it, and as a result of that, we have this conception which has been so helpful to us in the realm of bacteriology.

Perhaps one of the outstanding examples is Roentgen in the discovery of x-ray. We know he had a plate in the drawer of his desk. He was playing with Crookes tubes—playing with them, that is what a real scientist does; his work is play. He was working and applying himself industriously. When he developed his plate and found there the shadow of the key—the key had been lying on top of the darkened plate—Roentgen didn't throw the plate away and break it, and say, "Another spoiled plate! Isn't that too bad?"

He said, "Here, what is this?" And he worked out the miracles and the marvels of x-ray as we now understand it.

I could give you innumerable other examples—for instance Jenner, whom Dr. Reynolds mentioned in his very pleasant introduction, for which I thank you, sir, very much. Jenner, when a student working with Ludlow, his preceptor in Sudbury, heard a milkmaid say, "Oh, I can't take smallpox; I have had cowpox."

Well, other folks in England and even on the Continent had said that same thing. It was kind of a superstition, or fairy story, or folk lore, that people told, but Jenner had been trained by John Hunter. He had the scientific trend of mind that sensitized the young student, and he worked on that subject for twenty-five years, through and through, experimented with it and proved it before he gave it to the world to take its proper place.

Tom, Dick and Harry heard milkmaids and farmers say, "I can't get smallpox because I had cowpox." But it didn't register with them. However, when a genius like Jenner heard it, he made it bear fruit from which the world has profited in the control of smallpox, or at least it has given us the method by which smallpox may be controlled.

I think one of the prettiest examples that ever came to my notice in the realm of Serendipity is the discovery of the microphone and the essential parts of the telephone that we all use so nonchalantly every day. It

was invented by a young man by the name of Emile Berliner, in Washington. I knew him very well. He lived in a little room in an attic, in a hall room. He worked for $6 a week clerking in a store, just enough to keep him alive. But his work really began when the shop closed and he went up and studied these electrical problems in which he made his great discoveries.

It was a very hot August day in Washington—the temperature was high and the humidity excessive. He was standing there in his shirt sleeves alongside of the fire station. The telegraph key was clicking its dots and dashes with the Morse alphabet. The telegraph operator looked up at him —he was a friend of his; they often chatted there—and said to him, "That's John on the other end telegraphing."

Berliner said, "How do you know that is John?"

He said, "I can tell by the clicks."

"What do you mean?" said Berliner. "When you make the circuit it clicks and when you break the circuit it doesn't. You either get a click or you don't get a click."

The operator said, "No. no. If you press the key lightly you get one kind of a click. If you press it hard you get another kind of a click."

Again it was his prepared mind that sensitized him. He rushed home to his hall bedroom in the attic, and tried it out, and worked out what we now have—the fundamental problems of loose contact on which the telephone, the microphone and all these things are based.

There was a dramatic sequel to that story, because after it proved of such fundamental and great value, he received a royalty on every telephone, which was very nice. He was then able to build and have a real laboratory with assistants. But the big telephone companies didn't like that very much and they said he wasn't entitled to this, that he hadn't made the discoveries, and so forth.

In the court room, before the judge and jury, he told his story about the way I have given it to you. In the cross examination the lawyer, a sharp lawyer—this time a little too sharp—shook his finger in the face of Berliner and said to him, "Do you mean that you could make a telegraph key talk?"

Berliner had never thought of it that way before. He said, "Yes, of course I can make a telegraph key talk. Give me a few hours. I will fix it up."

And sure enough, with his loose contact, and a telegraph key on a table which made a good resonating board for his vibrations, and with a distant place in another part of the city for the transmitter, it sounded a little as though the voice had adenoids (laugher) but it convinced the judge and jury that Berliner could make a telegraph key talk. Of course it was largely through that that he won his case.

I could go on and give you many other illustrations as examples that

discoveries by scientists are not made by accident, as accidents are ordinarily understood. They are made by sagacity and through work—plenty of hard work. They may be called, not improperly, the by-products of science, just like by-products in industry which are often the most valuable part of the products. But mark you well that we cannot have by-products unless we make products. So that unless the scientist, unless the inquirer, unless the investigator who wants to push a knowledge farther into the darkness and light the way is willing to make products he will not be able to profit by or understand the usefulness of by-products.

There is one outstanding example that interests us all—especially since malaria is such a serious problem in North Carolina and in neighboring states—and that is the question of Serendipity in the life of Ronald Ross. I knew Ronald Ross very well. I spent his seventieth birthday with him. If you ever want a treat read his memoirs.

Ronald Ross' father was in the British Service in India, and as Ross grew up he made up his mind he was going to study medicine in order to get a medical degree, and through that degree enter the Indian Medical Service because he knew that in the Indian Medical Service all he had to do was to work about fifteen minutes to half an hour, at most an hour, a day, making the rounds in the hospital. Then he would have all the rest of the day to write poetry, compose music, look at sunsets, paint pictures and all that sort of thing. (Laughter)

That is the sort of fellow Ronald Ross was. He actually wrote novels which he really believed would replace those of Dickens. He wrote epics, poetry—I have the manuscript of one called "In Exile"—which he thought excelled those of Homer. He wrote music which he thought was better than that written by Beethoven and Brahms. He had a good opinion of himself (laughter) and he had a good time, too.

The practice of medicine to him was hardly a by-product. It was simply a way which gave him a chance to indulge in these fancies of his. One day, after some years of this, he had a sabbatical year and returned to England. He didn't have much to do, kind of moped around. Well, the first thing he did was to get married—he fell in love first and then got married. (Laughter)

Then, to occupy his time—he was, of course, just stepping on the gas all the time, his internal fires burned very brightly—he went to the Netley School, the Army Medical School, and there for the first time saw the scientific method of approach to solving the problems in preventive medicine, epidemiology in public health work, and for the first time learned how to use the microscope.

When that was revealed to him—he only needed that spark to light the fire in him, and that is where, if there was any accident, the accident occurred in the story of Serendipity in Ronald Ross—he consecrated himself to the study of the solution of the problem of malaria which you know,

up to that time, meant night air, miasma, all sorts of flights and fancies. And Sir Patrick Tancey threw him off the track for many years.

Sir Patrick said in his study of mosquitoes that the mosquito bites a person infected with malaria and she dies, falls into the swamp water and that poisons the swamp water. Then people drink the swamp water and that gives them malaria. That was thoroughly believed in.

Ross tried to prove that whole chain of events. For a long time he worked in India, in that torrid and humid climate. He just couldn't see the light, until one day while examining his infected mosquitoes he saw the salivary gland of a mosquito. He then saw that it was not the infected water that caused malaria. He saw that it was the bite of the mosquito itself that caused malaria when the mosquito bit a person.

That was really a very great discovery, and after he completed, practically, the chain of evidence to his own satisfaction, he wrote to his wife that he had finally gotten it and then broke out into song, and said,

"This day relenting God
Hath placed within my hands
A wondrous thing: and God
Be praised. At his command

Seeking His secret deeds
With tears and toiling breath
I find thy cunning seeds
O million murdering death.

I know this little thing
A myriad men will save.
O death, where is thy sting
Thy victory, O grave?"

I see that the time is going on, and in order to spare you from other similar examples in the realm of Serendipity that I might tell you about, I would like to revert to one of the things that Dr. Reynolds spoke of in his nice words of introduction; and that is, if we could live for several centuries to come and look back and read what the historians in future generations will say about this one in which we are living, we would find that they would note these great advances that are so dramatic and theatrical —the telephone, the flying machines, the x-ray and all these other things in technology and technocracy and whatnot.

They will be noted—all those things will play their part. But I think the one thing that they will single out above all others as an accomplishment of the generation in which we live—and I think we are living in the most wonderful age the world has ever seen since man put his foot on this foothold—is the conquest of disease. Life has been made longer. Life has been made surer. Life has been made happier.

However, the statisticians have made a great point of the increased longevity of life. In my humble philosophy longevity is a rather poor index of achievement. It is a material thing, but progress is not measured by a yardstick of any material values but by a yardstick of spiritual values. I do not see that there is any use in living longer if we cannot live better, and by better I mean better in the sense of service.

So that I say finally, with Kipling, that

"When earth's last picture is painted
And the tubes are twisted and dried,
Only the Master shall praise us
And only the Master shall blame.
No one shall work for money
And no one shall work for fame,
But each for the joy of working
And each in his separate star
Shall draw the thing as he sees it
For the good of all things as they are."

. . . The audience arose and applauded. . .

President Buie: Remain seated for just a few minutes longer, please. Dr. Rosenau, I wish to express to you my grateful appreciation for your address. I am sure we now all know what Serendipity is, and we can go out and pass it on. Also, Dr. Rosenau, I hope you will get so much tar on your heels that you will stay with us always.

Dr. Rosenau: I am going to stick.

President Buie: We will now have the report of the Resolutions Committee, Dr. Carlton.

Dr. Romulus L. Carlton (Winston-Salem): The Committee wishes to submit the following resolutions:

RESOLVED, That we, the members of the Resolutions Committee, feel that further investigation along the line of retirement annuities, or a pension retirement system for health workers, such as is contemplated in the National Social Security Act for employees in private industry, is advisable, and we therefore recommend that a committee of five be appointed to study this matter, and in cooperation with the State Health Officer take such action as may be deemed advisable.

The other resolution is,

RESOLVED, that we, the members of the North Carolina Public Health Association, extend our thanks and appreciation to the management of the Robert E. Lee Hotel for the use of its facilities for our meeting and to the local Committee on Entertainment for the excellent arrangements made for our comfort.

Respectfully submitted by the members of the Committee.

PRESIDENT BUIE: You have heard the report of the Resolutions Committee. What shall we do with it?

. . . It was moved and seconded that the report be accepted. . .

PRESIDENT BUIE: All in favor let it be known by saying "Aye"; opposed. It is carried.

SECRETARY ELLIOT: Dr. Armstrong will now please give us the report of the Committee on the President's Address.

DR. C. W. ARMSTRONG: Your Committee on the President's Address begs leave to submit the following report:

1. That we commend and thank the President for his instructive and interesting address.

2. That we endorse his sentiments in regard to a venereal disease program in North Carolina and also his belief that we should more seriously consider the health of the pre-school child.

3. That his history of the Public Health movement in North Carolina was very instructive and encouraging in that it has shown a steady growth and improvement and leads us to hope for continued advancement.

4. That in our opinion the address was one of the ablest to which it has been our privilege to listen and we recommend that the association go on record as endorsing it and that we express to Dr. Buie and his helpers our appreciation for the splendid program which they have arranged.

5. We recommend that a copy of this report be given Dr. Buie and that a copy be spread upon the minutes of the Association.

Respectfully submitted,

H. H. EPPERSON,
G. C. GAMBRELL,
C. W. ARMSTRONG.

SECRETARY ELLIOT: What shall we do with this report?

. . . It was moved, seconded, put to a vote and carried that the report be accepted. . .

PRESIDENT BUIE: By the way, Dr. Carlton, do you want to have that committee appointed now or will it be all right to do it later on?

DR. CARLTON: I think now will be all right.

PRESIDENT BUIE: I think I will leave that for the new president when he gets time.

I want to say that we are very grateful to all who have taken part in the program today and tonight. I think we have had a very fine meeting. I hope we will all be able to come back again next year.

At this time I am going to turn the gavel over to Dr. Foster of Fayetteville, our new President.

Dr. Foster! (Applause)

PRESIDENT-ELECT FOSTER: I have already heard one remark from the sidelines asking me to adjourn the meeting at once.

I appreciate the honor you have bestowed upon me in electing me President of the North Carolina Public Health Association. I will do my best to serve you in the very best possible way as far as my ability will allow me.

Is there any further business to come before the meeting before we adjourn?

There is one announcement. Dr. Carlton and Dr. Hege extend an invitation to all the public health officers present, and to all doctors who are interested to visit their venereal disease clinic which is held each afternoon, beginning at one o'clock. I understand that this is the largest venereal disease clinic in the state, and I am sure most of the public health officials will want to visit this clinic while in Winston-Salem.

. . . Announcement about Cootie Party. . .

PRESIDENT-ELECT FOSTER: If there is nothing further to come before the meeting, the meeting stands adjourned.

. . . The meeting thereupon adjourned at eight-thirty o'clock. . .

ALPHABETICAL LIST OF FELLOWS FOR 1937 WITH POST OFFICE ADDRESSES

Name	*Address*
*Abel, J. F., (Hon.)	Waynesville
Abernathy, H. N.	Charlotte
Abernathy, H. N., (Hon.)	Charlotte
Abernathy, Claude O., (Hon.)	Raleigh
Archard, Lucien	Morganton
*Adams, Carlton N.	Winston-Salem
Adams, Edw. E.	Murphy
Adams, J. L.	Asheville
Adams, J. R.	Charlotte
Adams, N. B.	Murphy
*Ader, O. L.	Walkertown
Alexander, G. T.	Thomasville
*Alexander, J. M.	Charlotte
Alexander, Jas. R., (Hon.)	Charlotte
Allan, William	Charlotte
Allen, A. L.	State Hosp., Goldsboro
Allen, Chas. I.	Wadesboro
*Allen, G. C.	Lumberton
*Allen, Jos. A., (Hon.)	New London
Allen, M. H.	Cramerton
Allen, Sylvia	Charlotte
*Allen, W. O.	Hendersonville
Allgood, R. A.	Fayetteville
Alyea, Edwin P.	Durham
*Ambler, Arthur C.	Asheville
*Anders, McT. G., (Hon.)	Gastonia
Anderson, Chas. A., (Hon.)	Burlington
Anderson, R. S.	Rocky Mount
*Anderson, W. B.	Durham
Anderson, Wade H., (Hon.)	Wilson
*Andrew, John M.	Lexington
Andrew, Lacey A., Jr.	Durham
Angel, Edgar	Franklin
Angel, Furman	Franklin
Anthony, W. A.	Gastonia
Archer, Isaac J., (Hon.)	Black Mountain
*Armistead, D. B.	Greenville
Ashby, E. C.	Mount Airy
*Ashby, J. W.	Raleigh
*Ashe, J. R.	Charlotte
Ashford, Chas. Hall	New Bern
Ashworth, B. L., (Hon.)	Marion
Ashworth, W. C., (Hon.)	Greensboro
Austin, D. R.	Charlotte
Austin, Frederick DeC.	Charlotte
*Aydlett, H. T., (Hon.)	Greensboro
Aydlett, Joseph P., (Hon.)	Earl
Ayree, J. S.	Clinton
Bacon, Harold Lyle	Bryson City
Baier, Geo. F., Jr.	W. Asheville
*Bailey, C. W.	Rocky Mount
Baker, Horace M.	Lumberton
Baker, W. E.	Arden
*Bandy, W. G.	Lincolnton
*Banner, A. C.	Greensboro
*Banner, Chas. W., OALR, (Hon.)	—Greensboro
Barbee, G. S.	Zebulon
Bardin, R. M.	Rockingham
*Barefoot, Graham B.	Wilmington
Barnes, J. T.	Asheboro
*Barnes, Tiffany	Asheboro
Barrett, H. P.	Charlotte
Barret, J. M.	Greenville
Barrier, H. W.	Black Mountain
*Barron, A. A.	Charlotte
Basnight, Thos. G., (Hon.)	Stokes
Bass, H. H., (Hon.)	Henderson
Bass, H. H., Jr.	Henderson
Bass, Spencer P.	Tarboro
Battle, John T. J., (Hon.)	Greensboro
*Battle, Margaret White	Rocky Mount
*Battle, N. P.	Rocky Mount
Baxter, O. D.	Charlotte
*Beall, L. G.	Black Mountain
Beam, H. M.	Roxboro
*Beam, R. S., OALR	Lumberton
Beasley, E. B.	Fountain
*Beavers, J. W.	Kernersville
Beckwith, R. P.	Roanoke Rapids
Beers, David L.	Asheville
*Bell, A. E., (Hon.)	Mooresville
*Bell, F. O.	Burlington
Bell, J. C.	Maysville
Bell, G. E.	Wilson
Bellamy, Robert H., (Hon.)	Wilmington
*Benbow, Edgar V.	Winston-Salem
Bennett, Jos. H.	Wadesboro
Benson, N. O.	Lumberton
Benton, Geo. R.	Goldsboro
Benton, Wayne J.	Bunn
Berry, John	Greensboro
Berryhill, W. R.	Chapel Hill
Best, D. E.	Goldsboro

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Name	*Address*
Best, Henry B	Wilson
Bethune, A. C	Raeford
Biggs, Montgomery H	Rutherfordton
*Bigler, V. L	Albemarle
Bitting, Numa Duncan	Durham
*Bittinger, C. L	Gatesville
*Bittinger, S. M	Sanatorium
Bizzell, M. E., OALR	Goldsboro
*Black, George Wm	Charlotte
*Black, O. R	Landis
Blackshear, T. J., OALR	Wilson
*Blackwelder, Verne H	Lenoir
Blair, Andrew	Charlotte
Blair, J. L	Gastonia
Blalock, B. K	Charlotte
Blanchard, T. W	Hobbsville
*Bliss, F. E	Fletcher
Block, M. E	Lexington
*Blue, Waylon	Jonesboro
Boice, E. S	Rocky Mount
Bolt, C. A	Marshville
Boney, Elwood R	Kinston
Bonner, J. B	Aurora
*Bonner, K. P. B., (Hon.)	Morehead City
*Bonner, M. D	Jamestown
*Bonner, O. B., OALR	High Point
Booker, Edwin N	Selma
*Boone, W. H., (Hon.)	Durham
*Boone, W. W	Durham
Boseman, C. A	Pinebluff
*Bost, T. C	Charlotte
*Bostic, Wm. C., (Hon.)	Forest City
*Bostic, W. C., Jr	Forest City
Bowen, J. P	Aberdeen
Bowers, M. A	Winston-Salem
Bowles, Francis N	Durham
*Bowman, C. R	Kannapolis
*Bowman, E. L	Lumberton
Bowman, H. P., (Hon.)	Greensboro
*Bradford, W. B	Charlotte
*Bradford, W. Z	Charlotte
Bradshaw, T. G	Wilson
Brady, Wade H	Burlington
Brandon, W. O	Concord
Brantley, Hassell, OALR	Spring Hope
Brantley, J. C	Spring Hope
Bray, T. L	Plymouth
Brenizer, A. G	Charlotte
*Brewer, J. S	Roseboro
Brewton, W. A	Enka
Brickhouse, H. M	Raleigh
*Bridges, D. T	Lattimore
Brinkley, H. M	Durham
Bristow, C. O	Rockingham
*Britt, C. S	Charlotte
*Britt, J. N	Lumberton
*Britt, T. C	Mt. Airy
*Brockmann, Harry L	High Point
*Brooks, E. Bruce	Winston-Salem
Brooks, F. P	Greenville
*Brooks, R. E	Burlington
Brookshire, H. G., (Hon.)	Asheville
*Broun, M. S., OALR	Roanoke Rapids
Brown, C. E	Salisbury
Brown, C. R	Goldsboro
Brown, G. A., (Hon.)	Mt. Ulla
Brown, G. W., (Hon.)	Raeford
*Brown, J. P., (Hon.)	Fairmont
Brown, J. S., Sr., (Hon.)	Hendersonville
*Brown, J. S., Jr	Hendersonville
Brown, Kermit E	Asheville
*Brown, W. M. B., OALR	Greenville
Brownsberger, Ethel	Biltmore
*Brownsberger, John F	Fletcher
*Brunson, E. P	Albemarle
Buchanan, L. T	Laurinburg
Buckner, J. M	Swannanoa
Buffaloe, J. S., (Hon.)	Garner
*Bugg, C. R	Raleigh
*Buie, Roderick M	Greensboro
*Bulla, A. C	Raleigh
Bullitt, J. B	Chapel Hill
Bullock, Thomas C., (Hon.)	Autryville
Bulluck, Ernest S	Wilmington
Bunch, Charles	Charlotte
Bunn, R. W	Enfield
Burleson, W. B	Plumtree
*Burns, J. E	Concord
Burt, B. W., (Hon.)	Holly Springs
Burt, S. P., (Hon.)	Louisburg
*Burwell, John C., Jr	Greensboro
Busby, G. F	Salisbury
*Busby, Julian G	Kannapolis
*Butler, Leroy J	Winston-Salem
*Butt, R. B	Marion
*Byerly, Andrew B., (Hon.)	Cooleemee
*Byrd, A. L	Raleigh
*Byrd, W. C	Angier
*Byrnes, T. H	Durham
Caddell, G. C	Hoffman
*Caldwell, D. G	Concord
Campbell, Alton C	Raleigh
Campbell, Jas. I	Norwood
Candler, Chas. Z	Sylva
Carlton, Romulus L., (Hon.)	Winston-Salem

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
Carlyle, J. B.	Burlington
Carmichael, T. W.	Rowland
*Carpenter, Coy C.	Wake Forest
Carpenter, G. R.	Wilmington
Carr, M. L.	LaGrange
*Carrington, G. L.	Burlington
*Carrington, S. M.	Oxford
Carroll, F. W.	Hookerton
Carter, P. C.	Madison
Carter, Thos. L.	Gatesville
Cashwell,	Ronoake Rapids
Castelloe, Cola	Windsor
*Casstevens, J. C.	Clemmons
Casteen, Kenan, OALR	Leaksville
*Cathell, E. J.	Lexington
Caviness, Zebulon N., (Hon.)	Raleigh
*Caviness, V. S.	Raleigh
*Cekada, Emil B.	Durham
Chadwick, W. S.	Beaufort
Chambers, P. J.	Charlotte
Chaplin, S. C.	Columbia
Cheesborough, Thos. P., (Hon.)	Biltmore
*Chester, P. J., OALR	Southern Pines
Cheves, W. G.	Bunn
Chiles, George C.	Sanford
Choate, A. B.	Charlotte
Clark, Badie T.	Wilson
*Clark, H. S.	Asheville
*Clary, Wm. T.	Greensboro
Clay, E. L.	Oxford
*Clayton, M. B.	Statesville
*Clement, Edward B., OALR, (Hon.)	Salisbury
*Cloninger, K. L.	Conover
Clyatt, Claude Eugene	Denton
Cobb, Donnell B.	Goldsboro
Cobb, Wm. H., Jr., (Hon.)	Greensboro
*Cocke, C. H.	Asheville
Cocke, E. R.	Asheville
Cocke, Jere E., (Hon.)	Asheville
Coddington, H. A.	Wilmington
*Coleman, G. S.	Raleigh
Colby, G. DeW.	Asheville
Cole, Walter F.	Greensboro
*Coleman, L. A.	Salisbury
*Collins, Ruth M.	Greensboro
*Combs, Jos. J.	Raleigh
*Cook, H. L., OALR	Greensboro
*Cook, J. L.	Winston-Salem
*Cook, W. E.	Mebane
*Cooke, G. C.	Winston-Salem
Cooper, A. Derwin	Durham
*Cooper, G. M., (Hon.)	Raleigh
Coppedge, T. O.	Nashville
*Coppridge, W. M.	Durham
Corbett, Clarence Lee	Dunn
Corbett, J. P.	Swansboro
Cornwell, A. M.	Lincolnton
*Corpening, O. J.	Granite Falls
Costner, W. V.	Lincolnton
Cotten, Clyde E., (Hon.)	Asheville
*Couch, V. F., ALR	Winston-Salem
Covington, J. M.	Wadesboro
Covington, J. M. C.	Ronoake Rapids
Cox, E. L., (Hon.)	Jacksonville
Cox, G. S.	Tabor
Cox, R. L.	Kerr
*Cozart, B. F.	Reidsville
Cozart, S. R.	Greensboro
*Cozart, W. S.	Fuquay Springs
Craddock, A. B.	Asheville
*Craig, S. Douglas	Winston-Salem
Cranford, J. F.	Gastonia
Cranmer, J. B., (Hon.)	Wilmington
Cranz, Oscar W.	Kinston
Craven, Erle, Jr.	Lexington
Craven, Jean	Lexington
Craven, Thomas	Charlotte
Craven, W. W.	Charlotte
Crawford, Robt. H.	Rutherfordton
Crawford, W. J.	Goldsboro
Crisp, S. M.	Greenville
*Crispell, R. S.	Durham
Croom, R. D., Jr.	Maxton
*Crouch, A. McR.	Wilmington
Crouch, T. D.	Stony Point
Crow, S. L.	Asheville
Crowell, A. J., (Hon.)	Charlotte
*Crowell, L. A., (Hon.)	Lincolnton
Crowell, L. A., Jr.	Lincolnton
*Crump, Curtis	Asheville
*Crump, C. L.	Hickory
*Crumpler, James F.	Rocky Mount
Crumpler, Paul	Clinton
Cummings, M. P.	Reidsville
Currie, D. S.	Parkton
Cutchin, J. Henry	Whitakers
Dale, G. C.	Goldsboro
Daligny, Charles, (Hon.)	Troy
*Dalton, B. B.	Liberty
*Dalton, Wm. N., (Hon.)	Winston-Salem
Daniels, O. C., OALR, (Hon.)	Oriental
*Darden, D. B.	Stantonsburg
*Daughtridge, A. L.	Rocky Mount
Davidian, Varton A.	Smithfield

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
*Davidson, Jno. E. S., (Hon.)	Charlotte
Davis, J. Franklin	High Falls
*Davis, J. M.	Wadesboro
*Davis, Jas. W.	Statesville
*Davis, P. B., Sheraton Hotel,	High Point
Davis, Rachel D.	Kinston
*Davis, R. B.	Greensboro
Davis, Stephen W.	Charlotte
*Davis, Thomas W., OALR, (Hon.)—	—Winston-Salem
Davis, T. M.	Charlotte
*Davison, Wilburt C.	Durham
*Dawson, W. E.	Hookerton
Deans, A. W.	Battleboro
DeArmon, J. McC., (Hon.)	Charlotte
Dees, D. A., OALR	Bayboro
*Dees, R. E.	Greensboro
*Dees, Rigdon O.	Greensboro
*DeLaney, C. O.	Winston-Salem
Dewar, William B.	Raleigh
Deyton, John W.	Asheville
*Dick, Julius V.	Gibsonville
Dickie, J. W.	Southern Pines
*Dickinson, E. T., (Hon.), ALR	Wilson
Dickinson, K. L.	Raleigh
*Dickson, M. S.	Oakboro
Dillard, G. P.	Draper
*Dixon, G. G.	Ayden
Dixon, Guy E., (Hon.)	Hendersonville
Dodd, B. R.	Wake Forest
*Dodge, Eva F.	Winston-Salem
Donnelly, Jno.	Charlotte
Dosher, Wm. S.	Southport
Dougherty, J. H.	Asheville
Doughton, J. L.	Sparta
*Drummond, C. S.	Winston-Salem
*Duckett, V. H.	Canton
*Duffy, Charles	New Bern
Duffy, R. N.	New Bern
Dula, F. M.	Lenoir
*Duncan, S. A.	Benson
Dunlap, L. V.	Albemarle
*Dunn, R. B.	Greensboro
*Durham, C. W.	Greensboro
*Eagle, J. C.	Spencer
*Eagle, Watt W., ALR	Durham
Eason, J. A.	Williamston
Eaves, Rupert S.	Rutherfordton
Eckel, O. F.	Asheville
Eckerson, C. N.	Cameron
*Edwards, B. O.	Asheville
Edwards, C. J.	Raleigh
Edwards, F. D.	Lawndale, Rt. 1
Edwards, J. D., (Hon.)	Siler City
Edwards, V. E.	Greensboro
Eldridge, Chas. P.	Raleigh
*Eldridge, Harvey A.	Benson
Elfman, Samuel L.	Fayetteville
*Elias, Lewis W.	Asheville
*Eller, Albert J., (Hon.)	Wilkesboro
*Ellington, A. J., OALR	Burlington
*Elliott, A. H.	Wilmington
*Elliott, J. A.	Charlotte
Elliott, J. C.	Oxford
*Elliott, W. F., OALR	Lincolnton
*Elliott, Wm.	Forest City
Ellis, R. C., (Hon.)	Shelby
*Ennett, N. T.	Greenville
Ervin, John W.	Morganton
Erwin, Evan A.	Laurinburg
Evans, J. E.	Wilmington
*Evans, W. F.	Williamston
Everett, A. C.	Rockingham
*Faison, Elias	Charlotte
*Faison, Thos. G.	Winton
*Faison, Yates W.	Charlotte
Fales, Robert	Wilmington
*Farrington, R. K.	Thomasville
Farthing, L. E.	Wilmington
*Fassett, Burton W., OALR	Durham
Faulk, J. G.	Pembroke
Fauntleroy, Jas. W.	Saluda
Fay, Oliver F.	Wilmington
Fearing, Isaiah, (Hon.)	Elizabeth City
Fearington, J. C. P.	Winston-Salem
Felton, R. L., Jr.	Carthage
*Felts, Robt. L.	Durham
Ferebee, C. G.	Morehead City
*Ferguson, R. T.	Charlotte
*Fetzer, P. W.	Reidsville
Fields, Leonard E.	Chapel Hill
Fike, Ralph L.	Wilson
Finch, O. E.	Raleigh
*Fitzgerald, J. D.	Burlington
*Flagge, Philip W.	High Point
Fleetwood, Jos. A.	Conway
*Fleming, Frank R.	Statesville
*Fleming, Fred	Coats
*Fleming, M. I.	Rocky Mount
Flemming, Giles M.	Cleveland
*Flippin, J. M., (Hon.)	Pilot Mountain
Flippin, Samuel T., (Hon.)	Siloam
Flowers, C. E.	Zebulon
Floyd, L. D.	Fair Bluff
*Flythe, W. H.	Norwood
Forbus, Wiley D.	Durham

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
Fortescue, Wm. N.	Hendersonville
Fortune, Alex F., (Hon.)	Greensboro
Foster, H. H.	Norlina
*Foster, M. T.	Fayetteville
Fox, N. A.	Greensboro
Fox, P. G.	Raleigh
*Fox, Robt. Eugene	Raleigh
*Franklin, Ernest W.	Charlotte
*Frazier, J. W.	Salisbury
Freeman, J. D., OALR	Wilmington
*Freeman, Wm. T.	Biltmore
*Fritz, William A.	Hickory
*Frizzelle, M. T.	Ayden
*Frye, Glenn R.	Hickory
Fulghum, Jas. E.	Louisburg
Futrell, L. M.	Murfreesboro
Gage, L. G.	Charlotte
Gallant, Robt M.	Charlotte
Galloway, W. C., (Hon.), OALR—	—Wilmington
Gamble, J. R.	Lincolnton
*Gambrell, Grover C.	Lexington
Gardner, C. E., Jr.	Durham
*Garren, R. H., (Hon.)	Monroe
*Garrenton, Connell	Bethel
*Garrison, R. B.	Hamlet
*Garriss, F. H.	Lewiston
*Garvey, Fred K.	Winston-Salem
*Garvey, R. R.	Winston-Salem
Gaskins, C. W.	Asheville
Gaskins, J. S.	Albemarle
Gaskin, Lewis R.	Albemarle
Gaskin, Madge B.	Albemarle
*Gaul, Jno. Stuart	Charlotte
*Geddie, K. B.	High Point
Gentry, Geo. W.	Roxboro
*Gibbon, James W.	Charlotte
*Gibbon, Robert L., (Hon.)	Charlotte
Gibbs, E. W.	Shelby
Gibbs, N. M., (Hon.)	New Bern
Gibson, John S., (Hon.)	Gibson
*Gibson, M. R., OALR, (Hon.)	Raleigh
*Gilbert, E. L.	Winston-Salem
Gillespie, S. C.	Asheville
Gilmore, C. M.	Greensboro
Gilreath, Frank H., (Hon.)—	—North Wilkesboro
Glascock, H. G., Jr.	Raleigh
*Glascock, Joy H., (Hon.)	Greensboro
Glenn, Charlie	Gastonia
*Glenn, C. F.	Rutherfordton
Glenn, H. F., Jr.	Gastonia
*Glenn, Lucius N., (Hon.)	Gastonia

Name	*Address*
*Gold, Ben	Shelby
Gold, Charles F.	Rutherfordton
Gold, T. B., ALR	Shelby
*Goley, Willard Coe	Graham
*Goode, T. V.	Statesville
Goodman, A. B., (Hon.)	Lenoir
*Goodwin, Edith A.	Morganton
*Goodwin, O. S.	Apex
*Goswick, H. W., Jr.	Winston-Salem
Goudelock, Jno. J.	Monroe
*Goudge, Mabel E.	West Durham
Gouge, A. E.	Bakersville
*Gove, Anna M., (Hon.)	Greensboro
Grady, F. M.	Mooresville
Grady, Jas. C., (Hon.)	Kenly
Grady, Wm. Earle, (Hon.)	Tryon
Graham, Charles	Wilmington
Grantham, Wm. L.	Asheville
Grayson, C. S.	High Point
*Greene, Jos. B., OALR	Asheville
Greene, P. Y.	Apex
Greene, W. A.	Whiteville
*Griffin, H. W.	Hickory
*Griffin, M. A.	Asheville
Griffin, W. R.	Asheville
Griffis, J. W.	Denton
*Griffith, F. W.	Asheville
*Griffith, L. M., OALR	Asheville
Grigg, John R.	Murphy
Griggs, W. T., (Hon.)	Poplar Branch
*Grimes, W. L.	Winston-Salem
*Groome, J. G.	High Point
Groves, R. B.	Lowell
*Gwyn, H. L.	Yanceyville
*Haar, F. B.	Greenville
*Hackler, R. H.	Washington
*Hagaman, J. B.	Boone
Halford, Jos. W., (Hon.)	Lillington
Hall, W. D.	Raleigh
*Ham, Clem	Goldsboro
*Hamblen, E. C.	Durham
*Hambrick, Robt. T.	Hickory
Hamer, Douglas, Jr.	Lenoir
Hamer, W. A.	Chadwick
*Hamilton, John H.	Raleigh
Hammond, A. F.	Grifton
*Hand, Edgar H.	Charlotte
*Hanes, F. M.	Durham
Hansen-Pruss, O. C. E.	Durham
Harbison, J. W.	Shelby
*Hardee, W. P., OALR	Durham
*Harden, Graham	Burlington
*Harden, R. N.	Greensboro

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
Hardin, R. H.	Banner Elk
Hardy, Ira M., OALR, (Hon.)	Kinston
Hare, R. B.	Wilmington
*Harney, J. N.	High Point
*Harper, F. T., Jr.	Jamestown
*Harper, J. H.	Snow Hill
*Harrell, L. J.	Goldsboro
Harrill, L. B., (Hon.)	Caroleen
Harris, W. T.	Troy
Harrison, Edmund, (Hon.)	Greensboro
*Harrison, Edward T.	High Point
Harrison, H. H.	Asheville
Harriss, Andrew H., (Hon.)	Wilmington
*Harry, J. M.	Fayetteville
*Hart, Deryl	Durham
*Hart, O. J.	Winston-Salem
Hart, V. K.	Charlotte
Hathcock, Thos. A., (Hon.)	Norwood
Hatcher, M. A.	Hamlet
Hayes, R. B.	Hillsboro
Hays, B. K., (Hon.)	Oxford
*Haywood, C. L., Jr.	Elkin
Harvey, W. W.	Greensboro
*Haywood, Hubert B., Jr.	Raleigh
Head, W. T.	Campobello, S. C., Rt. 4 (Rutherford Co.)
Hedgpeth, Cary	Lumberton
Hedgepeth, E. McG.	Chapel Hill
*Hedgepeth, L. R.	Lumberton
*Hedrick, C. R.	Lenoir
*Hege, J. Roy	Winston-Salem
*Helms, J. B.	Morganton
*Helsabeck, B. A.	King
*Helsabeck, C. J.	Walnut Cove
*Helsabeck, R. S.	King
Henderson, C. C.	Mount Olive
Henderson, Irma C.	Asheville
Henderson, Jno. P.	Jacksonville
Henry, T. B.	Rockingham
Hensley, Chas. A.	Asheville
Herbert, Fred L.	Andrews
*Herman, Chas. B.	Statesville
Herring, E. H.	Raleigh
*Herring, R. A.	Greensboro
Hester, Jos. R.	Wendell
Hester, Wm.	Reidsville
Hicks, Calvin S., (Hon.)	Durham
Hicks, I. F., (Hon.)	Dunn
*Hicks, V. M., Oph.	Raleigh
Highsmith, Charles, (Hon.)	Dunn
*Highsmith, J. D.	Fayetteville
*Highsmith, J. F., (Hon.)	Fayetteville
Highsmith, J. F., Jr.	Fayetteville
*Highsmith, Seavy, (Hon.)	Fayetteville
Highsmith, W. C.	Fayetteville
*Hightower, Felda	Wadesboro
Hill, J. N.	Murphy
*Hill, M. D.	Raleigh
*Hill, Wm. I., (Hon.)	Albemarle
Hinnant, Milford	Micro
*Hinson, Angus	Statesville
*Hipp, Edw. R.	Charlotte
Hipps, A. G. T.	Asheville
Hodgin, H. H.	Red Springs
Hoggard, J. T.	Wilmington
*Holbrook, J. Samuel	Statesville
*Holladay, L. W.	High Point
Holloway, Joseph C.	Durham
Holloway, Robert Lee, (Hon.)	—West Durham
*Hollyday, W. M., OALR	Asheville
*Holmes, A. B.	Fairmont
*Holt, D. W.	Greensboro
Holt, Wm. P., (Hon.)	Erwin
Holt, Wm. P., Jr.	Erwin
Hood, J. Sidney	Gastonia
Hooper, D. D.	Sylva
Hooper, Jos. W.	Wilmington
Hoover, C. H., (Hon.)	Crouse
Horton, M. C., OALR	Raleigh
*Horton, W. C., (Hon.)	Raleigh
Houck, Albert F., (Hon.)	Lenoir
Houser, E. A., (Hon.)	Shelby
*Houser, Forest M.	Cherryville
Houser, O. J.	Charlotte
Hovis, L. W., OALR, (Hon.)	Charlotte
Howard, C. E.	Goldsboro
Howell, W. L.	Ellerbe
Howle, Eugene B.	Raleigh
*Hubbard, Chas. C., (Hon.)	Farmer
Hubbard, Fred C.	North Wilkesboro
*Hudson, C. C.	Greensboro
Huffines, T. R.	Asheville
*Hunsucker, Chas. R.	Hickory
Hunt, J. F.	Spindale
*Hunt, J. S.	Charlotte
*Hunt, W. Bryce	Lexington
Hunter, J. P.	Cary
Hunter, L. W., (Hon.)	Charlotte, Rt. 1
Hunter, W. B.	Lillington
*Hunter, W. Myers	Charlotte
Hunter, W. C.	Wilson
*Hurdle, S. W.	Winston-Salem
Huston, Jno. W.	Asheville
*Hutchens, E. M., (Hon.)	—North Wilkesboro

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
Hyde, Francis Edward	Beaufort
Ingersoll, Louise M	Asheville
Ingram, Chas. B., (Hon.)	Mt. Gilead
*Irwin, Henderson	Eureka
*Ivey, H. B	Goldsboro
Ivey, R. R., U.S.P.H.S	Asheville
*Jackson, Walter Leo	High Point
Jacocks, W. P	Delhi, India (Lincoln Co.)
James, Albert W	Laurinburg
*James, Arthur A., Jr	Sanford
James, F. P	Laurinburg
*James, W. D	Hamlet
Jarman, F. G	Ronoake Rapids
*Jennings, R. G	Thomasville
Jervey, A. J	Tryon
*Jett, Samuel G	Reidsville
Jewett, R. D., (Hon.), OALR—	—Wilmington
John, Peter, (Hon.)	Laurinburg
*Johnson, A. N	Garland
*Johnson, C. T	Red Springs
Johnson, Edward J	Cherokee
*Johnson, Floyd	Whiteville
*Johnson, Geo. W	Wilmington
Johnson, H. H	Louisburg
*Johnson, Harry L	Hickory
Johnson, John B	Old Fort
*Johnson, Jos. L	Graham
Johnson, J. R	Ramseur
Johnson, N. M., (Hon.)	Durham
*Johnson, Paul W	Winston-Salem
*Johnson, Thos. C., (Hon.)	Lumberton
*Johnson, W. A	Reidsville
*Johnson, Walter R	Asheville
Johnson, W. C	Canton
*Johnson, Wingate M	Winston-Salem
*Johnston, J. G., OALR	Charlotte
Johnston, Christopher	Durham
Johnston, W. W	Manteo
Jonas, John F., (Hon.)	Marion
*Jones, Beverly N., OALR	Winston-Salem
*Jones, Carey C	Apex
Jones, Catesby	Asheville
Jones, D. C	Lansing
*Jones, O. H	Charlotte
Jones, R. Duval, (Hon.)	New Bern
Jones, R. R., Jr.	Durham
*Jones, R. Rives	Winston-Salem
Jones, T. Lester	Lansing
Jones, Thomas T	Durham
Jones, W. M	Gastonia
*Jones, Wm. M., (Hon.)	Greensboro
Jones, W. S	Nashville
Jordan, Wm. S., OALR, (Hon)—	—Fayetteville
Joyner, P. W	Enfield
Judd, Eugene C	Raleigh
Judd, Glenn B	Varina
Judd, James M., (Hon.)	Varina
Justa, Samuel H	Macclessfield
*Justice, Gaston B	Marion
Justice, L. H	Littleton
Justice, Wm. S	Asheville
Keever, Jas. W	Hickory
*Kieger, O. R	Winston-Salem
Keiter, W. E	Kinston
*Keith, Marion Y	Greensboro
Kelly, Luther W	Charlotte
Kelly, Wm. H	Durham
*Kemp, Malcolm D	Pinebluff
*Kendall, B. H	Shelby
Kendall, John H	Richlands
Kende, Tibor N	Gulfport, Miss. (Burke Co.)
Kenfield, H. W	Hatteras
*Kennedy, John P.	Charlotte
*Kent, Alfred A., (Hon.)	Winter Park, —Florida, (Caldwell Co.)
*Kent, Alfred A., Jr	Granite Falls
Kerns, T. C., OALR	Durham
*Kerr, John D	Clinton
*Kerr, Jas. E., (Hon.)	Winston-Salem
Kibler, W. H	Morganton
Killian, Frank M	Franklin
*King, E. S	Wake Forest
*King, I. Campbell	Flat Rock
*King, Parks M., (Hon.)	Charlotte
King, Richard M., (Hon.)	Concord
*King, Robt. Rogers	Boone
Kinsman, Henry F., (Hon.)	Hamlet
Kirby, Guy S., (Hon.)	Marion
*Kirby, W. L	Winston-Salem
Kirchberg, Roy Wm	Whittier
Kirk, W. R., (Hon.)	Hendersonville
Kirksey, James J	Morganton
Kirkpatrick, W. L	Waynesville
Kitchin, Thurman D	Wake Forest
*Knight, Floyd L	Sanford
Knight, H. W	Bostic
*Knight, Wm. P., (Hon.)	Greensboro
*Knox, J. C	Raleigh
Knox, John Jr	Lumberton
*Koonce, Donald	Wilmington
Koonce, S. Everett, OALR, (Hon.)—	—Wilmington

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
*Kornegay, Lemuel W., (Hon.)—	—Rocky Mount
*Kutscher, G. W., Jr.	Asheville
*Lackey, M. A.	High Point
*Lackey, W. J.	Fallston
Lafferty, Robt. H., (Hon.)	Charlotte
Lamm, I. W., (Hon.)	Raleigh
Lancaster, F. J.	Lexington
Lancaster, N. F.	Waynesville
Lancaster, Wm. Jesse	Wilmington
Lane, Bessie	Raleigh
*Lane, John L., OALR	Rocky Mount
Lapsley, A. F.	Badin
Lassiter, H. G.	Weldon
*Lassiter, V. C.	Winston-Salem
Laton, Jas. F., OALR	Albemarle
Lattimore, E. B., (Hon.)	Shelby
*Lawrence, B. J.	Raleigh
*Leake, W. G.	East Bend
Le Bauer, S. F.	Greensboro
Ledbetter, Jas. M., OALR	Rockingham
*Lee, J. Marshall	Newton Grove
Lee, Lawrence V., (Hon.)	Lattimore
*Lee, Mike	Kinston
Lee, Thomas L.	Kinston
*Leiby, G. M.	Bryson City
*Leinbach, Robt. F.	Charlotte
*Lentz, C. M.	Albemarle
*Leonard, J. C., Jr.	Lexington
Lewis, C. W.	Beaufort
Lewis, H. W., (Hon.)	Jackson
Lewis, J. S.	Hickory
*Lewis, S. V.	Roxboro
*Liles, L. C.	Raleigh
*Lilly, Jas. M., OALR, (Hon)—	—Fayetteville
*Linville, A. Y., (Hon.)	Winston-Salem
Linville, W. C.	Goldsboro
Lister, J. L.	Jackson
*Little, H. L.	Gibsonville
*Little, Lonnie M.	Statesville
Liverman, J. S.	Winterville
*Livingston, E. A., OALR	Gibson
Logan, F. W. H.	Rutherfordton
*London, Arthur Hill	Durham
*Long, Benj. Leroy	Glen Alpine
Long, Glenn	Newton
Long, H. F., (Hon.)	Statesville
Long, I. C.	Goldsboro
*Long, R. H.	Morganton
*Long, T. W. M.	Roanoke Rapids
*Long, V. McK.	Winston-Salem
Long, Wm. M.	Mocksville
*Long, Z. F.	Rockingham
Looney, J. J. W., OALR	Rocky Mount
Lord, Marjery J.	Montreat
*Lore, Ralph	Lenoir
*Lott, Wm. C.	Asheville
*Love, Bedford E., (Hon.)	Roxboro
Love, Wm. M.	Monroe
Lovelace, Thos. C.	Henrietta
Lovill, Robt. J.	Mount Airy
Lowery, E. F.	Raleigh
*Lowery, John R.	Salisbury
Lucas, Charles DeF.	Charlotte
Lupton, C. C.	Burlington
Lutterloh, I. Hayden, Jr.	Sanford
Lyday, C. E.	Gastonia
*Lyday, R. O.	Greensboro
Lynn, C. K.	Valdese
Lyon, B. R.	Greensboro
Lyon, Henry Wise	Windsor
MacConnell, John W., OALR	Davidson
MacFadyen, Paul R.	Concord
*MacRae, J. D., Jr.	Asheville
*McAdams, C. R.	Belmont
*McAllister, Jean	Greensboro
*McAnnally, Jas. McG.	Reidsville
*McAnally, Wm. J. (Hon.)	High Point
McBee, Paul	Bakersville
*McBrayer, L. B., (Hon.)	Southern Pines
McBrayer, R.	Summit, N. J. (Hoke Co.)
McBryde, Angus M.	Durham
*McCain, P. P.	Sanatorium
*McCain, Walkup K.	High Point
*McCain, Wm. R., (Hon.)	High Point
*McCall, A. C., OALR	Asheville
*McCampbell, John, (Hon.)	Morganton
*McCants, C. H.	Winston-Salem
McChesney, W. W.	Gastonia
McClees, E. C.	Elm City
McClelland, Joseph O.	Maxton
*McCoy, Thos. M.	Charlotte
McCotter, St. Elmo	Bayboro
McCracken, C. M., (Hon.)	Fairview
McCracken, J. R., (Hon.), OALR—	—Waynesville
McCracken, M. H.	Asheville
McCuiston, A. M.	Mt. Olive
*McCutchan, Frank, OALR	Salisbury
*McCutcheon, W. B.	Durham
McDade, B. B.	Burlington
McDonald, A. M.	Greensboro
McDowell, F. C.	Siler City
*McDowell, Harold	Gastonia

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
*McDowell, R. H.	Belmont
McDowell, W. K.	Scotland Neck
McEachern, Duncan	Wilmington
*McElwee, Ross S.	Statesville
*McFadyen, O. L.	Fayetteville
*McGeachy, R. S., (Hon.)	Weldon
*McGee, J. M.	Greensboro
McGee, Jas. W., (Hon.)	Raleigh
McGee, Robert L.	Raleigh
*McGehee, Jno. Wm., (Hon.)	Reidsville
McGoogan, Benj. J.	Morven
*McGriffin, W. C.	Asheville
McGuire, B. B.	Newland
*McIntosh, D. M.	Old Fort
*McIntosh, D. M., Jr.	Marion
McIntosh, W. R.	Rockingham
McIntyre, Stephen	Lumberton
McIver, Lynn, (Hon.)	Sanford
*McKay, Hamilton W.	Charlotte
McKay, Jos. F., (Hon.)	Buies Creek
McKay, Robert W.	Charlotte
*McKay, W. P.	Fayetteville
McKee, John S.	Raleigh
*McKee, Lewis M.	Durham
*McKenzie, B. W.	Salisbury
*McKnight, R. B.	Charlotte
*McLaughlin, C. S., (Hon.)	Charlotte
McLaughlin, J. E., (Hon.)	Statesville
McLean, E. K.	Charlotte
McLean, John W., (Hon.)	Godwin
McClelland, W. D.	Mooresville
McLeod, A. H., (Hon.)	Aberdeen
McLeod, N. H.	Raleigh
*McLeod, Vida C.	Southern Pines
*McLeod, W. G.	Southern Pines
McLesky, J. H.	Charlotte
McMillan, E. A.	Winston-Salem
McMillan, J. M.	Candor
*McMillan, R. D.	Red Springs
McNairy, Caroline	Lenoir
*McNeil, Jas. H.	North Wilkesboro
*McPhail, L. D.	Charlotte
*McPheeters, S. B.	Goldsboro
*McPherson, C. W., OALR	Burlington
*McPherson, S. D., OALR, (Hon.)—	—Durham
Mackie, Geo. C.	Wake Forest
Maddry, M. Crocker	Ronoake Rapids
*Malloy, S. A., (Hon.)	Yanceyville
*Maness, A. K.	Greensboro
*Mangum, C. S.	Chapel Hill
*Mann, I. Thurman	High Point
*Manning, I. H., (Hon.)	Chapel Hill
Mariner, N. B., (Hon.)	Belhaven
Markham, Blackwell	Durham
Marr, M. W.	Pinehurst
*Marsh, Frank B.	Salisbury
*Marshall, J. F.	Winston-Salem
*Martin, J. A.	Lumberton
Martin, J. F.	Dunn
Martin, J. H.	Red Oaks
Martin, J. W.	Ronoake Rapids
*Martin, Moir S.	Mt. Airy
*Martin, William F.	Charlotte
*Martin, W. J.	Greensboro (Mecklenburg)
Mason, Manly	Newport
Massey, C. C.	Charlotte
Matheson, J. Gaddy	Ahoskie
Matheson, James P., (Hon.)	Charlotte
Matheson, R. A.	Raeford
*Matros, Nathaniel H.	Oteen
Mathews, Vann M.	Charlotte
*Matthews, B. B.	Shelby
Matthews, Jas O., (Hon.)—	—Clinton, R.F.D.
*Matthews, M. L., (Hon.), OALR—	—Sanford
Matthews, Wm. W.	Leaksville
*Maulden, Paul R.	Kannapolis
Mayer, W. B.	Charlotte
Meadows, J. H.	Fairmont
*Meadows, W. J., (Hon.)	Greensboro
Mears, George A.	Asheville
Mebane, W. C., (Hon.)	Wilmington
*Mebane, W. C., Jr.	Wilmington
Menzies, H. C., (Hon.)	Hickory
Merritt, John H.	Woodsdale, R. 1
*Mewborn, J. M.	Farmville
Miles, Walter W.	Champion
*Milham, C. G.	Hamlet
Millander, Chas. W.	Asheville
Miller, J. F.	Marion
Miller, O. L.	Charlotte
*Miller, R. C.	Gastonia
Miller, Robert B., (Hon.)	Goldsboro
Miller, W. Edwin	Whiteville
*Milliken, J. S.	Southern Pines
*Mitchell, Geo. W.	Wilson
*Mitchell, G. T.	Wilkesboro
Mitchell, Paul H.	Ahoskie
*Mitchell, R. C.	Mt. Airy
*Mitchell, Z. P.	Bryson City
Mitchener, J. S., OALR	Raleigh
*Mock, Frank L.	Lexington, Rt. 3
*Monk, Henry L., (Hon.)	Salisbury

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
Monroe, C. R.	Pinehurst
*Montgomery, J. C.	Charlotte
Moore, Alexander W.	Charlotte
*Moore, B. D.	Mount Holly
Moore, Chas. E., (Hon.)	Wilson
Moore, D. B.	Badin
Moore, D. F.	Shelby
*Moore, Henry B.	Graham
*Moore, Julian A.	Asheville
Moore, L. W.	Beaufort
*Moore, Oren	Charlotte
*Moore, R. A.	Charlotte
*Moore, R. A.	Winston-Salem
Moore, Roy H.	Canton
*Moore, W. Houston	Wilmington
Morgan, B. E.	Asheville
Morgan, G. A.	Asheville
*Morris, Jos. A., (Hon.)	Oxford
Mosely, Chas. W., (Hon.)	Greensboro
*Mosely, Z. V.	Kinston
*Moss, G. O.	Cliffside
*Motley, Fred Elliott	Charlotte
Mudgett, W. C.	Southern Pines
*Mullen, M. P.	Wilson
Munroe, H. Stokes	Charlotte
Munroe, J. P., (Hon.)	Charlotte
*Munt, H. F.	Winston-Salem
*Murchison, D. R.	Wilmington
*Murphy, Gibbons W.	Asheville
Murphy, W. B., (Hon.)	Snow Hill
Murray, R. L.	Raeford
*Myers, Alonzo	Charlotte
*Myers, John Q., (Hon.)	Charlotte
Nalle, B. C., (Hon.)	Charlotte
*Nance, C. L.	Charlotte
Nash, J. Fred	St. Paul
Neal, John W., (Hon.)	Monroe
Neal, Kemp P.	Raleigh
Neal, Paul N.	Raleigh
*Neblet, H. C.	Charlotte
Neece, K. E.	Monroe
Nelson, R. J., (Hon.)	Robersonville
*Nelson, W. H.	Clinton
Neville, C. H.	Scotland Neck
Newcombe, A. P., Jr.	Henderson
*Newell, H. A., OALR, (Hon.)	—Henderson
*Newell, Leon B.	Charlotte
*Newman, Harold H.	Salisbury
*Newton, Howard L.	Charlotte
*Newton, Wm. K.	N. Wilkesboro
Nichols, Alvin A.	Sylva
Nichols, Ashbury S.	Sylva
*Nichols, Austin F.	Roxboro
*Nichols, R. E., Jr.	Durham
*Nichols, Rhodes E., (Hon.)	—Durham, Rt. 8
Nicholson, B. M.	Enfield
Nicholson, N. G., Jr.	Mt. Gilead
Nicholson, P. A., (Hon.)	Washington
Nisbet, D. Heath	Charlotte
*Noble, R. P.	Raleigh
*Nobles, Jos. E., (Hon.)	Greenville
*Noblin, Roy L.	Oxford
*Noell, R. H.	Rocky Mount
*Norburn, R. L.	Asheville
Norburn, C. S.	Asheville
Norfleet, A. C.	Tarboro
*Norfleet, E. P.	Roxobel
Norman, J. S, OALR	Hickory
Norment, W. B.	Greensboro
Norris, Henry	Waverly Mills, S. C. (Rutherford Co.)
*Northington, J. M.	Charlotte
Norton, Roy	Raleigh
Nowlin, Preston	Charlotte
Oates, George, (Hon.)	Grover
Odell, J. W.	Dunn
*Ogburn, H. H.	Greensboro
*Ogburn, L. C.	Winston-Salem
Olive, P. W.	Fayetteville
*Oliver, A. S.	Raleigh
Oliver, J. A.	Rockwell
Oliver, Robt. D.	Selma
Orgain, Edward S.	Durham
*Ormond, A. L.	Sanatorium
Ormand, J. W.	Monroe
*Orr, Chas. C., (Hon.)	Asheville
Orr, P. B., (Hon.)	Asheville
Osborne, Gladys H.	Waynesville
*Outlaw, J. K.	Albemarle
*Overcash, W. E.	Southern Pines
Owen, J. F.	Dix Hill, Raleigh
Owen, M. L.	Canton
Owen, Robert H.	Canton
*Owenby, Arthur D.	Greensboro
*Pace, K. B.	Greenville
*Paddison, J. R., (Hon.)	Kernersville
Page, B. W.	Trenton
Page, R. C.	Kinston
Palmer, Horace	Littleton
Palmer, M. C.	Tryon
Palmer, Yates S.	Valdese
Papineau, A.	Plymouth
Parker, Geo. F.	Asheville
Parker, H. R.	Greensboro

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
*Parker, O. L., OALR	Clinton
Parker, S. F	Shelby
*Parker, Paul G	Erwin
Parker, W. T	Fayetteville
*Parks, Hugh	Elkin
*Parks, L. L	Tarboro
Parrott, M. C	Kinston
Parrott, Wm. T., (Hon.)	Kinston
*Parsons, W. H	Ellerbe
*Pate, F. J., OALR	Greensboro
Pate, Jas. G	Gibson
Pate, J. F	Canton
Patrick, L. N	Gastonia
*Patterson, Fred M	Greensboro
Patterson, Jos. F., (Hon.)	New Bern
*Peeler, Clarence N., OALR	Charlotte
Peeler, John H., (Hon.)	Salisbury
*Peery, Vance P., OALR	Kinston
Peete, C. H	Warrenton
Pendleton, Wilson	Asheville
*Perkins, Jno. R., OALR	Winston-Salem
Perry, A. H	Wood
Perry, D. R	Durham
Perry, E. M	Rocky Mount
*Perry, G. G	High Point
Perry, H. B	Boone
Perry, H. G	Louisburg
Perry, Wm. Clifton	Louisburg
Person, Edgar C., OALR	Pikeville
Person, J. B., (Hon.)	Selma
Persons, Elbert Lapsley	Durham
Peters, W. A	Elizabeth City
*Peterson, C. A	Spruce Pine
Petteway, George H	Charlotte
*Pfohl, Samuel F., (Hon.)	Winston-Salem
Phifer, Edward W	Morganton
*Phillips, C. C	Charlotte
*Phillips, C. H	Thomasville
*Phillips, E. N	North Wilkesboro
Pickett, John A., (Hon.)—	—Burlington, R.F.D., 1
Pitman, E. E	Oak City
Pittman, M. A	Wilson
Pittman, R. L	Fayetteville
Pittman, W. A	Fayetteville
*Plyler, R. J	Salisbury
Pollock, David	Hobgood
Pool, B. B	Winston-Salem
Poole, C. T	St. Pauls
*Post, J. J	Greensboro
*Powell, Albert H	Durham
Powell, H. S	Pineville
Powers, Frank P., ALR	Raleigh
*Prefontaine, E	Greensboro
Pressly, Geo. W., (Hon.)	Charlotte
Preston, J. Z	Tryon
Pritchard, G. L	Black Mountain
*Proctor, I. M	Raleigh
Pugh, Chas. H	Gastonia
Purdy, J. J	Oriental
Putney, R. H	Elm City
Quickel, John C	Gastonia
Raby, J. G	Tarboro
Rainey, W. T	Fayetteville
Ramseur, W. L	Kings Mountain
*Ramsey, James G	Washington
*Rand, C. H	Fremont
Rand, E. G	Raleigh
*Raney, R. B	Durham
Rankin, Pressly R	Mt. Gilead
*Rankin, S. W	Winston-Salem
Rankin, Watson S., (Hon.)	Charlotte
*Ranson, J. Lester	Charlotte
*Ravenel, S. F	Greensboro
Ray, F. L	Charlotte
*Ray, John B., (Hon.)	Leaksville
Ray, O. L., (Hon.)	Raleigh, Rt. 1
Ray, S. P	Leaksville
Ray, W. Turner	Charlotte
*Rea, G. L	Charlotte
*Readling, Hubert F	Durham
Reaves, W. P., OALR	Greensboro
Redding, Alex H., (Hon.)	Cedar Falls
*Redwine, J. Dan	Lexington
*Reeves, G. F	Walnut Cove
Reeves, J. L	Canton
*Reeves, Robert J	Durham
Reeves, R. J	Leicester
Register, F. M., (Hon.)	Kinston
Register, J. F	Greensboro
Reid, D. H	Wagram
Reid, Geo. P., (Hon.)	Forest City
Reid, James W	Lowell
Reitzel, C. E., (Hon.)	High Point
*Reynolds, C. V., (Hon.)	Raleigh
Reynolds, E. H	Mayodan
Rhodes, Jas. S., (Hon.)	Williamston
*Rhodes, J. S	Raleigh
*Rhudy, Booker E	Greensboro
*Rhyne, Robt. E	Gastonia
*Rhyne, S. A	Statesville
*Richardson, W. P	Chapel Hill
Ricks, Leonard E., (Hon.)	Fairmont
Riddle, J. B., (Hon.)	Morganton
*Riggsbee, A. E	Durham
*Ringer, Paul H	Asheville

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
Robeson, E. L.	Tarboro
*Roberson, Foy	Durham
Roberson, Robt. S.	Hazlewood
Roberts, Bryan N.	Hillsboro
*Roberts, B. W.	Durham
Roberts, Roy F.	Asheville
Roberts, W. M.	Gastonia
*Robertson, E. M.	Durham
*Robertson, James F.	Wilmington
Robertson, J. M.	Charles
Robertson, J. N., OALR	Fayetteville
*Robertson, L. H.	Salisbury
*Robinson, C. W.	Charlotte
*Robinson, D. E.	Burlington
Robinson, J. D.	Wallace
Robinson, J. L.	Rutherfordton
Rodman, J. C., (Hon.)	Washington
Rogers, Jas. Rufus, (Hon.)	Raleigh
Rogers, W. A., (Hon.)	Franklin
Rollins, Vance B.	Henderson
*Root, Aldert S.	Raleigh
Rose, A. S.	Chapel Hill
*Ross, Geo. H., (Hon.)	East Durham
*Ross, Otho B.	Charlotte
*Ross, Robert A.	Durham
Ross, Thos. W.	Charlotte
Rosser, R. G.	Vass
Rourk, M. H.	Shallotte
*Rousseau, J. P.	Winston-Salem
*Royal, Ben F.	Morehead City
*Royal, D. M.	Salemburg
*Royall, M. A., (Hon.), OALR	Elkin
*Royster, Hubert A., (Hon.)	Raleigh
Royster, S. S., (Hon.)	Shelby
Royster, Thos. H.	Tarboro
Royster, Thos. S.	Henderson
*Ruark, R. J.	Raleigh
Rucker, A. A.	Rutherfordton
*Rudd, P. D.	Reidsville
*Rudisill, J. D.	Lenoir
Ruffin, D. W.	Ahoskie
Ruffin, J. M.	Durham
Russell, C. R.	Granite Falls
Russell, Jesse M.	Canton
Russell, Lloyd P.	Fletchers
Russell, W. M.	Asheville
Sabiston, Frank, OALR	Kinston
Sadler, R. C.	Whiteville
Saliba, M. M., OALR	Wilson
Salley, E. McQueen, (Hon.)—	—Hendersonville
*Salmons, H. C.	Elkin
Saunders, Joseph H., (Hon.)	Williamston
*Saunders, John R.	Lewiston
Saunders, John T.	Asheville
Saunders, S. A.	Aulander
*Saunders, S. Stewart	High Point
Sawyer, Chas. J., (Hon.), OALR—	—Windsor
Sawyer, W. W., (Hon.), OALR—	—Elizabeth City
Schaffle, Karl	Asheville
*Schallert, P. O.	Winston-Salem
*Schenk, Sam M.	Shelby
*Schoenheit, E. W.	Asheville
*Schoonover, R. A.	Greensboro
Schuler, J. E.	East Durham
Scott, R. C.	Asheville
Scott, S. F.	Union Ridge
Scruggs, W. Marvin	Charlotte
*Seay, Hillis L.	Huntersville
*Seay, T. W.	East Spencer
*Selby, W. E.	Charlotte
Sessoms, E. T.	Roseboro
Sevier, J. T., (Hon.)	Asheville
*Shafer, Irving E.	Salisbury
*Shands, Alfred Rives, Jr.	Durham
*Sharp, O. L.	Greensboro
*Sharpe, C. R.	Lexington
*Sharpe, F. A.	Greensboro
Sharpe, Frank L., (Hon.)	Statesville
Shaver, W. T.	Albemarle
*Shaw, J. A.	Fayetteville
*Shaw, L. R.	Statesville
*Shelburne, P. A.	Greensboro
*Sherrill, C. L.	Statesville
Sherrill, P. M.	Thomasville
Shields, Henry B., (Hon.)	Carthage
Shirley, H. C., OALR	Charlotte
*Shohan, Jos.	Greensboro
*Shull, J. Rush	Charlotte
*Sidbury, J. B.	Wilmington
*Sigman, F. G.	Spencer
Sikes, G. L., (Hon.)	Salemburg
*Sikes, Henry	Greensboro
*Simmons, R. R.	Winston-Salem
Simons, C. E.	Wilson
Simpson, H. H.	Altamahaw
*Sink, C. S.	N. Wilkesboro
*Sink, V. Rex	Winston-Salem
*Sisk, C. N.	Waynesville
Skinner, Louis C., (Hon.)	Greenville
*Slate, John S., (Hon.)	Winston-Salem
*Slate, J. W.	High Point
*Slate, M. L.	High Point
*Slate, Wesley C.	Spencer

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
Sloan, A. B	Mooresville
Sloan, D. B., OALR	Wilmington
*Sloan, H. L., Oph	Charlotte
Sloan, Wm. H	Garland
*Sloop, Eustace H	Crossnore
Small, Victor R	Clinton
Smith, A. Jones	Black Creek
Smith. Alick T	Greensboro
*Smith, Annie T	Durham
Smith, B. R	Asheville
Smith, C. T	Rocky Mount
Smith, D. L	Saluda
*Smith, D. T.	Durham
Smith, D. W	Waynesville
*Smith, F. C., OALR	Charlotte
Smith, F. G	Wilson
*Smith, F. L	Burlington
Smith, G. M	Monroe
*Smith, Harold Benj.	North Wilkesboro
*Smith, J. A	Lexington
Smith, John McNeill	Rowland
Smith, Jos. E	Windsor
Smith, Joseph	Greenville
*Smith, O. F	Scotland Neck
Smith, R. C	Morehead City
*Smith, R. E	Mt. Airy
*Smith, Sidney	Raleigh
Smith, Thomas A	Charlotte
Smith, W. F	Chadbourn
*Smith, William Gordon	Thomasville
Smith, W. G.	Wendell
*Smith, Wm. H.	Goldsboro
Smoot, J. E., (Hon.)	Concord
*Soady, J. H	Asheboro
Sorrell, F. Y	Wadesboro
*Sowers, Roy G., OALR	Jonesboro
*Spainhour, Ellis H., (Hon.)	Winston-Salem
*Sparrow, Thos. DeL	Charlotte
*Speas, W. P., OALR	Winston-Salem
*Speed, J. A	Durham
Speight, J. A	Rocky Mount
Spencer, Frederick B	Salisbury
Spencer, Wm. O., (Hon.)	Winston-Salem
*Spikes, N. O	Durham
*Spoon, S. C	Burlington
Sprinkle, C. N	Weaverville
Sprunt, Douglas H	Durham
*Sprunt, W. H., Jr	Winston-Salem
Squires, Claude B	Charlotte
Staley, S. Walter	Rocky Mount
Stanford, Lois Foote	Durham
Stanford, W. R	Durham
*Stanton, D. A., (Hon.)	High Point
*Starling, H. M	Winston-Salem
*Starling, W. P	Clinton
Starr, H. F	Greensboro
Stephenson, B. E	Weldon
*Stevens, M. L., (Hon.)	Asheville
*Stimpson, R. T	Raleigh
Stoddard, James K	Cashier
Stokes, Jas. E., (Hon.)	Salisbury
*Stone, G. E	King
Stone, M. L	Rocky Mount
*Street, C. A	Winston-Salem
*Street, M. E., (Hon.)	Glendon
Stretcher, R. H	Waynesville
*Strickland, Arthur T	Wilson
*Strickland, E. F., (Hon.)	Winston-Salem
*Strickland, E. L	Wilson
*Strickland, H. G	Greensboro
*Stringfield, Samuel L., (Hon)	Waynesville
Stringfield, Thos., (Hon.)	Waynesville
Stringfield, Thos., Jr	Waynesville
Stutz, Greer M	Southern Pines
*Strosnider, Chas. F	Goldsboro
Strowd, W. A	Durham
Suiter, W. G	Weldon
Sullivan, J. T	Asheville
Sullivan, Victor	Wilmington
*Summerlin, Harry	Laurinburg
Summerville, W. M	Charlotte
*Sumner, E. A	High Point
*Sumner, G. H	Asheboro
Sutton, Carl W	Richlands
Sutton, Wm. G	Seven Springs
Swann, C. C	Asheville
Swann, Jos. F., (Hon.)	Gastonia
*Sweaney, H. M	Durham
*Sykes, Ralph J	Mt. Airy
*Sykes, R. P	Asheboro
*Symington, John	Carthage
*Tally, B. T	Albemarle
Tally, J. S	Troutman
*Tankersley, J. W	Greensboro
Tate, W. C	Banner Elk
Tatum, Roy C	Statesville
Tayloe, John Cotten	Washington
Tayloe, Joshua, II	Washington
*Taylor, A. D	Lumberton
Taylor, Chas. W	Kings Park, N. Y.
Taylor, E. H. E	Morganton
*Taylor, F. R	High Point
*Taylor, G. W	Mooresville
Taylor, H. C	Charlotte

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
	(Chadwick Station)
Taylor, Frank V.	Charlotte
Taylor, James T.	Greensboro
*Taylor, R. W.	Oxford
Taylor, S. R., OALR	Greensboro
Taylor, Thos. Jeff	Scotland Neck
Taylor, Wesley	Greensboro
Taylor, W. I.	Burgaw
Taylor, Wm. L., (Hon.)	Oxford
Templeton, J. Y.	Mooresville
Tennent, G. S., (Hon.), OALR	Asheville
*Terry, J. R.	Lexington
Terry, Wm. Calvin	Hamlet
Thaxton, B. A.	Roxboro
Thigpen, H. G.	Scotland Neck
*Thomas, C. D.	Sanatorium
Thomas, W. N.	Oxford
Thompson, A. F., (Hon.), OALR	Troy
Thompson, C. A.	Sparta
Thompson, C. D., (Hon.)	High Point
*Thompson, Edg. S.	Winston-Salem
Thompson, H. C.	Shelby
Thompson, Hugh A.	Raleigh
*Thompson, Joseph W.	Creedmoor
*Thompson, S. R.	Charlotte
Thompson, S. W., Jr.	Morehead City
Thorp, A. T.	Rocky Mount
Thurston, Asa	Taylorsville
*Tice, W. T.	High Point
Todd, L. C.	Charlotte
Townsend, R. G.	St. Pauls
Triplett, W. R.	Purlear
*Trivette, W. A.	Houstonville
Trotter, Fred O.	Hendersonville
*Troxler, R. M.	Burlington
*Tucker, Earl Van	Grifton
Tucker, Jno. H., OALR, (Hon.)	—Charlotte
Turlington, W. I., Jr.	Jacksonville
Turnbull, A.	Durham
Turner, H. G.	Raleigh
Turrentine, Kilby P.	Kinston
*Tuttle, A. F.	Spray
*Tuttle, Rueben G.	Winston-Salem
Tydeman, F. W. L.	San Francisco, Cal. (Mecklenburg Co.)
Tyler, E. R.	Durham
*Tyndall, R. G.	Kinston
*Tyner, Carl V.	Leaksville
*Tyson, T. D.	Mebane
Upchurch, Robert T.	Henderson
Upchurch, T. G.	Smithfield
*Valk, A. deT.	Winston-Salem
*Vann, H. M.	Wake Forest
Vann, J. R.	Spring Hope
Verdery, W. C.	Fayetteville
Verner, Carl Hugh	Forest City
*Vernon, Jas. W.	Morganton
*Vestal, Willis J., (Hon.)	Lexington
*Walker, H. D., (Hon.)	Elizabeth City
*Walker, J. B.	Burlington
Wall, Roger I.	Raleigh
*Wall, R. L.	Winston-Salem
*Walters, Chas. M.	Burlington
*Walton, C. L.	Glen Alpine
*Walton, G. B.	Chadbourn
Wannamaker, Edw. J., Jr.	Charlotte
Ward, I. A., OALR	Hertford
Ward, Jesse E., (Hon.)	Robersonville
*Ward, John LaB.	Asheville
Ward, Needham E.	Greenville
*Ward, Vernon A.	Robersonville
Ward, W. C.	Pineville
*Ward, W. T.	Raleigh
Warren, R. F.	Prospect Hill
Warrick, L. A.	Goldsboro
*Warwick, H. C.	Greensboro
Washburn, J. M.	Lake Lure
Watkins, F. B.	Morganton
*Watkins, G. T.	Durham
Watkins, W. M.	Durham
Watson, John B.	Raleigh
Watson, Paul S.	Madison
*Watson, Thos. M.	Greenville
Weathers, Bahnson	Ronoake Rapids
*Weathers, R. R.	Knightdale
Weaver, Henry B., (Hon.)	Asheville
*Weaver, W. J., (Hon.)	Rt. 4, Asheville
Webb, B. G., (Hon.)	Andrews
Webb, W. P.	Rockingham
Weddington, J. L.	Hendersonville
Weizenblatt, Sprinza	Asheville
Wessell, John C., (Hon.)	Wilmington
West, B. C.	Kinston
West, C. F.	Kinston
West, Louis N., OALR	Raleigh
West, Robert M., (Hon.)	Salisbury
Westcott, W. E.	Candler
Westmoreland, J. R.	Canton
*Whaley, James D.	Hickory
Wheeler, J. H.	Henderson
Whelpley, Frank L.	Goldsboro
Whicker, Guy L.	Kannapolis
*Whisnant, Albert M., (Hon.), OALR	—Charlotte
*Whitaker, J. Allen	Rocky Mount

* Present at 1937 Meeting at Winston-Salem.

Name	*Address*
Whitaker, Paul F.	Kinston
*White, F. W. M.	Halifax
*White, R. A.	Asheville
White, Thos. P.	Charlotte
White, W. H. C.	Elizabeth City
*Whitehead, S. L.	Asheville
Whitfield, B. W.	Murphy
Whitfield, Wm. Cobb, (Hon.)	Salisbury
*Whittington, Claude	Greensboro
Whittington, Jas. B.	Winston-Salem
Whittington, W. W., (Hon.)	Snow Hill
Wilkerson, Charles B.	Raleigh
Wilkes, Grover C.	Sylva
*Wilkes, Marcus B.	Laurinburg
*Wilkins, J. C.	Haw River
Wilkins, J. W., OALR	Mt. Olive
Wilkins, R. B., OALR	Durham
Wilkins, S. A., (Hon.)	Dallas
Wilkinson, C. T.	Wake Forest
Wilkinson, R. W., Jr.	Wake Forest
Wilcox, J. W., (Hon.)	West End
Williams, Albert F., (Hon.)	Wilson
Williams, Chas. F.	Raleigh
*Williams, Claude B., (Hon.)—	—Elizabeth City
*Williams, J. H.	Sanatorium
Williams, James Marcus	Warsaw
Williams, John D., (Hon.)—	—Guilford Station
Williams, J. D., Jr.	Stokesdale
*Williams, Lester L.	Marion
Williams, L. P.	Edenton
*Willis, A. P., (Hon.)	Candler
*Willis, B. C.	Rocky Mount
Willis, W. M.	Farmville
Wilson, Albert R., (Hon.)	Greensboro
*Wilson, Frank, Jr.	Raleigh
*Wilson, Frank E.	Mooresville
*Wilson, N. G.	Madison
Wilson, R. B.	Asheville
Wilson, S. Glenn	Angier
Windley, William	Washington
Winkler, Harry	Charlotte
Winn, W. C.	Williamston
Winstead, J. L.	Greenville
Winston, P. H.	Clarksville, Va.
Wiseman, P. H.	Avondale
Wishart, Wm. E.	Charlotte
*Wolfe, H. C., OALR	Greensboro
Wolff, D. R.	Greensboro
Wood, Frank	Marion
*Wood, George T.	High Point
Wood, J. W., (Hon.)	Boiling Springs
Wood, Martha	Marion
Woodard, A. G.	Goldsboro
*Woodard, C. A.	Wilson
*Woodard, G. B., OALR	Wilson
Woodcock, John H.	Hendersonville
*Woodruff, Fred G.	High Point
Woodson, Charles W.	Salisbury
*Woodward, J. G.	Asheville
Wooten, Floyd P.	Kinston
*Wooten, W. I.	Greenville
Wrenn, S. M.	Bay Pines, Fla.
*Wright, J. B., (Hon.), OALR	Raleigh
*Wyatt, A. T.	Lillington
*Wyatt, Wortham	Winston-Salem
*Wylie, W. deK.	Winston-Salem
Yarborough, Frank R.	Cary
*Yarborough, R. F., (Hon.)	Louisburg
*Yoder, Paul A.	Winston-Salem
*York, Alexander Arthur	High Point
Young, G. McD.	Postell
Young, J. C.	Asheville
*Yow, D. E.	Concord
*Yow, I. A.	Concord
*Zealy, A. H., Jr.	Goldsboro
*Zimmerman, Robert U.	Welcome

* Present at 1937 Meeting at Winston-Salem.

ROSTER OF FELLOWS FOR 1937
BY COUNTIES

NOTE:—Every physician in the state whose name we could secure has had an opportunity to supply correct information as to his name, postoffice, academic and medical education, date of State license and date State Society was joined. A few did not take advantage of the opportunity. Anyone finding an error should report it to the Secretary of the society.

ALAMANCE-CASWELL COUNTIES SOCIETY

Name and Address	Licensed	Joined State Society
Secretary: Jos. L. Johnson, Graham; Jeff. Med. Coll., 1926	1926	1930
Anderson, Chas. A., Burlington, (Hon.); Coll. P. and S., Balt., 1901	1893	1896
Bell, F. O., Burlington; Atlanta Med. Coll., 1918	1921	1928
Braddy, Wade Hampton, Burlington; Univ. of N. C., 1909	1909	1913
Brooks, R. E., Burlington; Jeff. Med. Coll., 1920; U. N. C.	1920	1922
Carlyle, J. B., Burlington; Jeff. Med. Coll., 1926; U. N. C., Wake Forest	1926	1928
Carrington, G. L., Burlington; Johns Hopkins, 1920; U. N. C.	1920	1925
Cook, W. E., Mebane; U. N. C., Wash. Univ., 1930	.....	1934
Ellington, A. J., Burlington; Columbia Univ., 1915; Wake Forest	1915	1917
Fitzgerald, J. D., Burlington; Duke Univ., 1934	1934	1937
Goley, Willard Coe, Graham; Univ. of Pa., 1924; U. N. C.	1924	1924
Gwyn, H. L., Yanceyville; Med. Coll. Va., 1923	1923	1925
Harden, Graham, Burlington; Univ. of Pa., 1919	1920	1922
Lupton, C. C., Burlington; Temple, 1931; U. N. C.	1931	1934
McDade, B. B., Burlington; Univ. of Md., 1918; U. N. C.	1918	1920
McPherson, C. W., Burlington; Univ. of Md., 1910; U. N. C.	1910	1912
Malloy, S. A., Yanceyville, (Hon.); Ky. School Med., 1897	1898	1903
Moore, Henry Blanchard, Graham; Jeff. Med. Coll., 1920, Wake Forest	1920	1923
Pickett, J. A., Burlington, R.F.D., 1, (Hon.); Univ. of Tenn., Coll. of Med., 1894	1894	1904
Robinson, D. E., Burlington; Harvard Med. Coll., 1927	1929	1930
Scott, S. F., Union Ridge; Univ. of Pa., 1918; U. N. C.	1918	1920
Simpson, H. H., Altamahaw; Univ. of Md., 1925	1925	1926
Smith, F. L., Burlington; Univ. of Pittsburgh, 1927	1927	1928
Spoon, S. C., Burlington; Univ. of Md., 1918; U. N. C.	1918	1920
Troxler, R. M., Burlington; Univ. of Md., 1914	1914	1915
Tyson, T. D., Mebane; Univ. Coll. of Med., Richmond, 1899	1899	1904
Walker, J. B., Burlington; Med. Coll. Va., 1914; U. N. C.	1914	1916
Walters, C. M., Burlington; Univ. of Md. and P. and S., Balt., 1908; U. N. C.	1908	1909
Warren, R. F., Prospect Hill; Atlanta School of Med., 1911	1911	1919
Wilkins, J. C., Haw River; Univ. of Md., 1911; U. N. C.	1911	1920

ALEXANDER—SEE IREDELL-ALEXANDER

ALLEGHANY—SEE WILKES-ALLEGHANY

ANSON COUNTY SOCIETY

President: J. M. Davis, Wadesboro; Columbia Univ., 1913; Wake Forest	1913	1920

Name and Address	Licensed	Joined State Society
Secretary: F. Y. Sorrell, Wadesboro; Jeff. Med. Coll., 1930; Wake Forest	1930	1933
Allen, Chas. I., Wadesboro; Columbia Univ. Coll. P. and S., 1913; Wake Forest, 1911	1913	1922
Bennett, Jos. H., Wadesboro; Univ. of Md., 1894	1894	1904
Covington, J. M., Wadesboro; Med. Coll. of Phil., 1899; U. N. C.	1899	1899
Hightower, Felda, Wadesboro; Univ. of Pa., 1933	1933	1936
McGoogan, Benj. J., Morven; Univ. of Md., 1912; U. N. C.	1912	1923

ASHE—SEE WATAUGA-ASHE

AVERY COUNTY SOCIETY

President: R. H. Hardin, Banners Elk; N. C. Med. Coll., 1914	1914	1919
Secretary: B. B. McGuire, Newland; Jeff. Med. Coll., 1918; U. N. C.	1919	1928
Burleson, W. B., Plumtree; Univ. Md., 1915; U. N. C.	1915	1916
Sloop, Eustace H., Crossnore; N. C. Med. Coll., 1905; Jeff. Med. Coll., 1908	1905	1909
Tate, W. C., Banners Elk; Tenn. Med. Coll., 1908	1909	1912

BEAUFORT COUNTY SOCIETY

Secretary: R. H., Hackler, Washington;		
Bonner, J. B., Aurora; Univ. of Md. School of Med. and Coll. P. and S., 1918; U. N. C.	1918	1920
Mariner, N. B., Bellhaven, (Hon.); Univ. Coll. of Med., Va., 1903	1903	1903
Nicholson, P. A., Washington, (Hon.); P. and S., Balt., 1889	1889	1890
Ramsey, Jas. G., Washington; Univ. of Penna., 1922; U. N. C.	1924	1924
Rodman, J. C., Washington, (Hon.); Bellevue Med. Coll., 1892	1892	1895
Tayloe, John Cotten, Washington; Univ. of Pa., 1922; U. N. C.	1924	1924
Tayloe, Joshua, II, Washington; Univ. of Pa., 1923; U. N. C.	1923	1926
Windley, William, Washington;	.....	1937

BERTIE COUNTY SOCIETY

President: Frank H. Garriss, Lewiston; Jeff. Med. Coll., 1912	1912	1918
Secretary: S. A. Saunders, Aulander; Jeff. Med. Coll., 1914; U. N. C.	1914	1918
Castelloe, Cola, Windsor; Univ. of Pa., 1917; U. N. C.	1917	1926
Lyon, Henry Wise, Windsor; Univ. of Pa. Sch. of Med., 1918; U. N. C.	1919	1920
Norfleet, E. P., Roxobel; Va. Med. Coll., 1914	1914	1920
Saunders, John Rudolph, Lewiston; Emory Univ., 1926; Wake Forest	1926	1931
Sawyer, Charles Judson, Windsor, (Hon.); P. and S., Balt., 1895	1895	1897
Smith, Jos. Elmer, Windsor; Med. Coll. of Va., 1921	1921	1922

BLADEN COUNTY SOCIETY

BRUNSWICK COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....

BUNCOMBE COUNTY SOCIETY

President: T. R. Huffines, Asheville; Indiana Univ. Med. Sch., 1919	1922	1923
Secretary: G. W. Kutscher, Jr., Asheville; Univ. of Pittsburgh, 1923	1925	1926
Adams, J. L., Asheville; Jeff. Med. Coll., 1910	1910	1913
Ambler, Arthur C., Asheville; Jeff. Med Coll., 1920	1921	1922

Name and Address	Licensed	Joined State Society
Archer, Isaac J., Black Mountain, (Hon.); Northwestern Univ. Med. School, 1896	1905	1907
Baier, Geo. F., Jr., W. Asheville; Hahnemann Med. Coll., 1906	1920	1930
Baker, W. E., Arden; Chattanooga Med. Coll., 1908; U. N. C.	1915	1916
Barrier, H. W., Black Mountain; Chicago Medical School, 1921	1931	1936
Beall, L. G., Black Mountain; N. C. Med. Coll., 1906; Univ. of Pa., 1911	1906	1906
Beers, David L., Asheville; Univ. Mich., 1925	1928	1929
Brewton, W. A., Enka; Univ. of Pa., 1927; Wake Forest, 1925	1927	1929
Brookshire, Harley G., Asheville, (Hon.); N. C. Med. Col., 1905	1905	1907
Brown, Kermit E., Asheville; Jeff. Med. Coll., 1927	1927	1930
Brownsberger, Ethel, Biltmore; Coll. of Med. Evangelists, 1927	1933	1934
Brownsberger, John F., Fletcher; Coll. of Med. Evan., Los Angeles, 1925	1928	1929
Buckner, J. M., Swannanoa; Univ. N. C., 1909	1909	1912
Cheesborough, Thomas P., Biltmore, (Hon.); Univ. of N. Y., 1891	1891	1900
Clark, Harold S., Asheville; Univ. of Pa., 1922, U. N. C.	1922	1924
Cocke, C. H., Asheville; Cornell Univ., 1905	1912	1913
Cocke, E. R., Asheville; Jeff. Med. Coll., 1913; U. N. C.	1914	1917
Cocke, Jere E., Asheville, (Hon.); Louisville Med. Coll., 1905	1905	1907
Colby, C. deW., Asheville; Univ. of Mich., 1892; Army Med. School, 1895	1909	1912
Cotten, Clyde E., Asheville, (Hon.); Univ. of Wooster, 1889	1901	1901
Craddock, Alva B., Asheville; Johns Hopkins, 1918	1923	1924
Crow, S. L., Asheville; Emory Univ., 1925	1926	1927
Crump, Curtis, Asheville; Harvard, 1926	1933	1934
Deyton, John W., Asheville; Rush Med. Coll., 1928; U. N. C.	.....	1931
Dougherty, J. H., Asheville; N. Y. Univ.	1936	1937
Eckel, O. F., Asheville; Med. Coll. of S. C., 1906	1907	1909
Edwards, B. O., Asheville; N. C. Medical Coll., 1905	1905	1909
Elias, Lewis W., Asheville, (Hon.); Columbus Univ. Coll. of P. and S., 1903	1906	1907
Freeman, Wm. T., Biltmore; Univ. of Ga., 1917	1927	1929
Gaskins, C. W., Asheville; Univ. of Tenn., 1932	1933	1934
Gillespie, S. C., Asheville; Univ. of Cincinnati, 1931	1935	1936
Grantham, Wm. L., Asheville; N. C. Med. Coll., 1906	1906	1911
Greene, Jos. B., Asheville; Univ. of Va., 1893	1910	1911
Griffin, M. A., Asheville; Jeff. Med. Coll., 1917; U. N. C.	1917	1918
Griffin, W. R., Asheville; Jeff. Med. Coll., 1910; Wake Forest	1910	1917
Griffith, F. W., Asheville; Johns Hopkins, 1906	1911	1912
Griffith, L. M., Asheville; Johns Hopkins, 1915	1916	1917
Harrison, H. H., Asheville; Jeff. Med. Coll., 1905; U. N. C.	1905	1918
Henderson, Irma C., Asheville; Tulane Univ., 1933	1934	1935
Hensley, Chas. A., Asheville; Jeff. Med. Coll., 1917, Wake Forest	1917	1927
Hipps, A. G. T., Asheville; Jeff. Med. Coll., 1916; Wake Forest, 1914	1916	1920
Hollyday, W. M., Asheville; Univ. of Maryland, 1908	1914	1915
Huston, Jno. Walter, Asheville; Rush Med. Coll., 1904	1912	1913
Ingersoll, Louise M., Asheville; Woman's Med. Coll., 1914	1925	1927
Ivey, R. R., U. S. P. H. S., Biltmore; Univ. of Ala., 1909	1921	1921
Johnson, Walter R., Asheville; Univ. Minnesota, 1924	1933	1934
Jones, Catesby, Asheville; Univ. of Md., 1893	1931	1932
Justice, Wm. S., Asheville; Harvard Univ., 1926	1930	1931

Name and Address	Licensed	Joined State Society
Lord, Marjery J., Montreat; Univ. of Mich., 1916	1918	1918
Lott, Wm. C., Asheville; Univ. of Colo., 1929	1930	1931
MacRae, J. D., Jr., Asheville; Univ. of Pa. Med. School, 1927; U. N. C	1927	1930
McCall, A. C., Asheville; Univ. of Md., 1910; U. N. C	1910	1912
McCracken, C. M., Fairview, (Hon.); N. C. Med. Coll., 1896	1896	1904
McGriffin, W. C., Asheville; Med. Evangelist, 1933	1935	1937
Matros, Nathaniel H., Oteen; Marquette Univ., 1930	1933	1934
Mears, George A., Asheville; Med. Coll. Syracuse Univ., 1924; Wake Forest	1924	1927
Millander, Chas. W., Asheville; Tulane Univ., 1919	1921	1924
Moore, Julian A., Asheville; Univ. of Pa., 1918; U. N. C	1918	1921
Morgan, B. E., Asheville; Univ. of Tenn., 1917	1921	1921
Morgan, G. A., Asheville; Univ. of Tenn., 1917	1920	1925
Murphy, Gibbons W., Asheville; Emory Univ., 1923	1923	1927
Norburn, Chas. S., Asheville; Univ. of Va., 1917; U. N. C	1921	1924
Norburn, R. L., Asheville; Vanderbilt Univ., 1925	1925	1927
Orr, Chas. C., Asheville, (Hon.); Univ. of Md., 1904; U. N. C	1904	1905
Orr, P. B., Asheville, (Hon.); Jeff. Med. Coll., 1901; U. N. C	1901	1904
Parker, Geo. F., Asheville; Univ. of Pa., 1923; U. N. C	1924	1926
Pendleton, Wilson, Asheville; Univ. of Va., 1908	1919	1920
Pritchard, G. L., Black Mountain; Univ. Coll. of Med., Richmond, 1913	1913	1926
Reeves, R. J., Leicester; Vanderbilt Univ., 1913	1913	1922
Reynolds, C. V., Raleigh, (Hon.); Univ. of N. Y., 1895	1895	1896
Ringer, Paul H., Asheville, (Hon.); Columbia Univ. P. and S., N. Y., 1904	1906	1907
Roberts, Roy F., Asheville; Tulane Univ., 1933	1933	1935
Russell, W. M., Asheville; Univ. of Cincinnati, 1928	1931	1932
Saunders, John T., Asheville; Columbia Univ., 1926	1934	1935
Schaffle, Karl, Asheville; Univ. of Pa., 1907	1926	1927
Schoenheit, E. W., Asheville; Jeff. Med. Coll., 1920	1920	1921
Scott, R. C., Asheville; Jeff. Med. Coll., 1902	1916	1919
Sevier, J. T., Asheville, (Hon.); Jeff. Med. Coll., 1895	1895	1899
Smith, B. R., Asheville; Jeff. Med. Coll., 1911	1913	1914
Sprinkle, C. N., Weaverville; Jeff. Med. Coll., 1910; U. N. C	1910	1922
Stevens, M. L., Asheville, (Hon.); Balt. Med. Coll., 1891	1892	1893
Sullivan, J. T., Asheville; Bellevue Hospital	1935	1937
Swann, C. C., Asheville; Tulane Univ., 1926	1930	1931
Tennentt, G. S., Asheville, (Hon.); N. C. Med. Coll., 1894	1894	1898
Ward, John LaB., Asheville; Med. Coll. of S. C., 1905	1921	1922
Weaver, H. B., Asheville, (Hon.); Washington Univ., 1872	1881	1882
Weaver, W. J., (Hon.); Asheville; Jeff. Med. Coll., 1898; U. N. C.	1897	1903
Weizenblatt, Sprinza, Asheville; Vienniese Univ. of Med., 1922	1929	1931
Westcott, W. E., Candler; Coll. Med. Evangelists, 1926	1930	1932
White, R. A., Asheville; Univ. Cin. Coll. of Med., 1918	1920	1921
Whitehead, S. L., Asheville; Jefferson Med. Coll., 1921; Wake Forest	1921	1929
Willis, A. P., Candler, (Hon.); Univ. of N. C., 1907	1904	1906
Wilson, R. B., Asheville; Univ. of Louisville, 1931; Wake Forest	1931	1933
Woodward, J. G., Asheville; Univ. of Pa., 1925; U. N. C	1925	1927
Young, J. C., Asheville; Univ. of Tenn., 1926; Wake Forest	1926	1929

BURKE COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: Jas. W. Vernon, Morganton; Jeff. Med. Coll., 1909; Wake Forest	1909	1913
Secretary: Edith A. Goodwin, Morganton; Women's Coll., Penna., 1932	1934	1934
Achard, Lucien, Morganton; R. Univ. of Naples (Italy)	1896	1929
Ervin, John W., Morganton; U.N.C., Wake Forest and Coll. Va., 1933	1935	1936
Helms, J. B., Morganton; Univ. of Pa., 1928; Wake Forest	1928	1931
Kende, T. Norbert, Gulfport, Miss., Royal Hungarian Univ., Budapest, Hungary, 1922	1927	1928
Kibler, W. H., Morganton; Univ. of Pa., 1914; U. N. C	1914	1918
Kirksey, Jas. J., Morganton; Univ. of Pa., 1921	1921	1923
Long, Benj. L., Glen Alpine; N. C. Med Coll., 1913	1913	1914
Long, R. H., Morganton; Jeff. Med. Coll., 1916; U. N. C	1916	1923
Lynn, C. K., Valdese; Med. Coll. of Va., 1932	1933	1937
McCampbell, John, Morganton, (Hon.); Balt. Med. Coll., 1894	1895	1899
Palmer, Yates S., Valdese; Med. Coll. Va., 1931	1931	1933
Phifer, Edward W., Morganton, (Hon.); N. C. Med. Coll., 1902	1902	1904
Riddle, J. B., Morganton, (Hon.); Vanderbilt Univ., 1898	1904	1904
Taylor, E. H. E., Morganton; Tulane Univ., La., 1924; Wake Forest	1924	1925
Walton, C. L., Glen Alpine; Med. Coll. Va., 1931	1931	1933
Watkins, F. B., Morganton; Jeff. Med. Coll., 1907	1907	1910

CABARRUS COUNTY SOCIETY

President:	.....	.....
Secretary	.....	.....
Brandon, W. O., Concord; Med. Coll. Va., 1928	1929	1932
Bowman, C. R., Kannapolis; Med. Coll. Va., 1928	1929	1930
Burns, J. E., Concord; Med. Coll. of Va., 1923	1923	1927
Busby, Julian G., Kannapolis; Univ. of Md., 1904	1904	1905
Caldwell, D. G., Concord; Univ. of Pa., 1923; U. N. C	1925	1925
King, Richard M., Concord, (Hon.); Jeff. Med Coll., 1903	1903	1906
MacFayden, Paul R., Concord, (Hon.); Univ. Coll. of Med., Richmond, 1901; U. N. C.	1901	1904
Smoot, J. E., Concord, (Hon.); Balt. Med. Coll., 1893	1894	1902
Whicker, Guy L., Kannapolis; Univ. of Md., 1926	1926	1928
Yow, D. E., Concord; Temple Univ., 1935; Wake Forest	1935	1937
Yow, I. A., Concord; N. C. Med. Coll., 1906	1906	1910

CALDWELL COUNTY SOCIETY

President: Alfred A. Kent, Jr., Granite Falls; Univ. of Pa.; U. N. C.	1934	1934
Secretary: Douglas Hamer, Jr.,Lenoir; Med. Coll. of S. C.; U. N. C.	1927	1929
Blackwelder, Verne H., Lenoir; U. N. C.	.....	1931
Corpening, O. J., Granite Falls; Univ. Coll. of Med. Va., 1906	1906	1907
Dula, Frederick M., Lenoir; Vanderbilt; U. N. C	1934	1934
Goodman, A. B., Lenoir, (Hon.); N. C. Med., 1898	1897	1904
Hedrick, Clyde R., Lenoir; Georgetown Med. Sch., 1925; U. N. C	1925	1926
Houck, Albert, Lenoir, (Hon.); P. and S., Balt., 1884	1891	1893
Kent, Alfred A., Winter Pk., Fla., (Hon.); Jeff. Med. Coll., 1885	1885	1894
Lore, Ralph, Lenoir; Rush Med., 1932	1933	1937
McNairy, Caroline, Lenoir; Woman's Med. Coll. Pa., 1917	1917	1919
Rudisill, J. D., Lenoir; Univ. of Md., 1922	1922	1923
Russell, C. R., Granite Falls; Univ. Coll. of Med., Richmond, 1909; U. N. C.	1909	1918

CAMDEN—SEE PASQUOTANK-CAMDEN-CURRITUCK-DARE

CARTERET COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary: Manly Mason, Newport; Tulane University; 1924; U. N. C.	1924	1925
Bonner, K. P. B., Morehead City, (Hon.); Med Coll. of Va., 1905; U. N. C.	1905	1905
Chadwick, W. S., Beaufort; Univ. of Va., 1928; Wake Forest 1926	1928	1930
Ferebee, G. C., Morehead City; Med. Coll. of Va., 1902	1904	1904
Hyde, Francis Edward, Beaufort; West. Res. Univ., 1920	1925	1926
Lewis, C. W., Beaufort; Med. Coll. of Va., 1930	1930	1931
Moore, L. W., Beaufort	.....	1933
Royal, Ben F., Morehead City; Jeff. Med. Coll., 1909; U. N. C.	1909	1909
Smith, R. C., Morehead City; Jeff. Med. Coll., 1923	1923	1926
Thompson, S. W., Jr., Morehead City; Med. Coll. Va., 1913 U. N. C.	1915	1922

CASWELL—SEE ALAMANCE-CASWELL

CATAWBA COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Cloninger, K. L., Conover; Univ. of Md., 1931; U. N. C.	1931	1932
Crump, C. L., Hickory; Baylor Univ., Dallas, Tex., 1930	1935	1936
Fritz, William A., Hickory; Temple Univ., 1933	1933	1934
Frye, Glen R., Hickory; Jeff. Med. Coll., 1921; U. N. C.	1921	1923
Griffin, H. W., Hickory; Emory Univ., 1923	1931	1932
Hambrick, Robt. T., Hickory; Univ. of Tulane, 1923; U. N. C.	1923	1924
Hunsucker, Chas. R., Hickory; N. C. Med. Coll., 1913	1913	1915
Johnson, Harry L., Hickory; Univ. of Cin., 1924; U. N. C.	1924	1927
Keever, James W., Hickory	.....	1930
Lewis, J. S., Hickory; Med. Coll. of S. C., 1925	1927	1932
Long, Glenn, Newton; N. C. Med. Coll., 1912	1912	1915
Menzies, H. C., Hickory, (Hon.); N. C. Med. Coll., 1894	1894	1899
Norman, J. S., Hickory; P. and S., Balt., 1909	1911	1920
Whaley, James D., Hickory; Med. Coll. of S. C., 1925	1927	1936

CHATHAM COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Edwards, J. D., Siler City, (Hon.); Louisville Med. Coll., 1887	.....	1894

CHEROKEE COUNTY SOCIETY

President: N. B. Adams, Murphy; Tenn. Med. Coll., 1896; U. N. C.	1909	1909
Secretary: Edw. E. Adams, Murphy; Jeff. Med. Coll., 1923; Wake Forest	1923	1924
Hill, J. N., Murphy; Univ. of Louisville, 1909	1909	1909
Herbert, Fred L., Andrews; Tenn. Med. Coll., 1904	1912	1912
Webb, B. G., Andrews, (Hon.); Louisville Med. Coll., 1885	1885	1885
Whitfield, B. W., Murphy; Tulane Univ., 1920	1920	1936
Young, G. McD., Postell; Lincoln Mem. Univ., 1916	1917	1918

CHOWAN-PERQUIMANS COUNTIES SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....
Ward, I. A., Hertford; Univ. of N. C., 1907	1907	1915
Williams, L. P., Edenton; Bellevue Med. Coll., 1918	1919	1921

CLAY—SEE MACON-CLAY

CLEVELAND COUNTY SOCIETY

President E. B. Lattimore, Shelby, (Hon.); Bellevue Med. Coll., 1897	1896	1904
Secretary: H. C. Thompson, Shelby; Tulane Univ., 1930; U. N. C.	1931	1932
Aydlette, Jos. P., Earl, (Hon.); Ky. Univ., 1901	1903	1903
Bridges, D. T., Lattimore; Emory Univ., 1926; Wake Forest 1924	1926	1927
Ellis, R. C., Shelby, (Hon.); Balt. Univ. Med. School, 1886	1889*	1891
Gibbs, E. W., Shelby; Univ. of Md., 1920; U. N. C., 1907	1907	1918
Gold, Ben, Shelby; Univ. of Md., 1920; U. N. C.	1920	1922
Gold, T. B., Shelby; N. C. M. Coll., 1911	1911	1915
Harbison, J. W., Shelby; Johns Hopkins, 1919; U. N. C.	1919	1924
Houser, E. A., Shelby, (Hon.); Chattanooga Med. Coll., 1898; Balt. Univ., 1902	1902	1904
Kendell, B. H., Shelby; Univ. of Md., 1929; U. N. C.	1929	1931
Lackey, W. J., Fallston; Va. Medical College, 1928; U. N. C.	1928	1929
Lee, Lawrence V., Lattimore, (Hon.); Emory Univ. School of Med., 1894	1897	1904
Matthews, B. B., Shelby; Med. Coll. of S. C.	1927	1929
Moore, D. F., Shelby; Jeff. Med. Coll., 1925; Wake Forest 1923	1925	1927
Oates, George Grover, (Hon.); Univ. of Louisville, 1894	1902	1904
Parker, S. F., Shelby; Med. Coll. of Va., 1929	1929	1931
Ramseur, W. L., Kings Mountain; Med. Coll. of S. C., 1926	1927	1929
Royster, S. S., Shelby, (Hon.); Tenn. Med. Coll., 1891	1896	1904
Schenk, Sam M., Shelby; Univ. of Pa., 1923; U. N. C.	1923	1926
Wood, J. W., Boiling Springs, (Hon.); Louisville Med. Coll., 1892	1901*	1900

COLUMBUS COUNTY SOCIETY

President: W. Edwin Miller, Whiteville; Emory Univ., 1929	1934	1935
Secretary: W. A. Greene, Whiteville; Northwestern Univ., Chicago, 1934	1935	1936
Cox, G. S., Tabor; N. C. Med. Coll., 1911	1911	1914
Floyd, L. D., Fair Bluff; N. C. Med. Coll., 1911	1911	1912
Johnson, Floyd, Whiteville; Memphis Hosp. Med. Coll., 1903	1903	1904
Sadler, R. C., Whiteville; N. C. Med. Coll., 1912	1912	1915
Smith, W. F., Chadbourne; N. C. Med. Coll., 1904	1904	1905

CRAVEN COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Ashford, Chas. Hall, New Bern; Johns Hopkins, 1927; U. N. C.	.....	1931
Duffy, Charles, New Bern; Jeff. Med. Coll., 1930	.....	1935
Duffy, R. N., New Bern; Johns Hopkins, 1906	1907	1908
Gibbs, N. M., New Bern, (Hon.); Univ. of Md. and Coll. P. and S., Balt., 1896	1895	1897

* Registered.

Name and Address	Licensed	Joined State Society
Jones, R. Duval, New Bern, (Hon.); Univ. of Md., 1896; U. N. C.	1897	1897
Patterson, Joseph F., New Bern, (Hon.); Jeff. Med. Coll., 1906 U. N. C.	1906	1906

CUMBERLAND COUNTY SOCIETY

President: W. T. Parker, Fayetteville; Med. Coll. of S. C., 1928	1931	1933
Secretary: O. L. McFadyen, Fayetteville; N. C. Med. Coll., 1912	1912	1912
Allgood, R. A., Fayetteville; Univ. of Md. and Coll. of P. and S., Balt., 1912	1915	1917
Bullock, Thomas C., Autryville, (Hon.); P. and S., Balt., 1885	1885	1886
Currie, D. S., Parkton; N. C. Med. Coll., 1906	1906	1907
Elfman, Samuel L., Fayetteville; Med. Coll. Richmond, Va	1936	1937
Foster, M. T., Fayetteville; Emory Univ., 1927; Wake Forest	1927	1930
Harry, J. M., Fayetteville; Med. Coll. of Va., 1934	1934	1936
Highsmith, J. D., Fayetteville; Jeff. Med. Coll., 1918	1918	1920
Highsmith, J. F., Fayetteville, (Hon.); Jeff. Med. Coll., 1889	1889	1893
Highsmith, J. F., Jr., Fayetteville; Univ. of Pa., 1927	1927	1929
Highsmith, Seavy, Fayetteville, (Hon.); Univ. Coll. of Med., Richmond, 1901	1901	1902
Highsmith, W. C., Fayetteville; Univ. of Cincinnati, 1931; U. N. C.	1930	1932
Jordan, Wm. S., Fayetteville, (Hon.); Univ. of N. C., 1906	1906	1907
Lilly, James M., Fayetteville, (Hon.); Univ. Coll. of Med., Richmond, 1903; U. N. C.	1903	1904
McKay, W. P., Fayetteville; Tulane Univ., 1916; U. N. C.	1916	1921
Olive, P. W., Fayetteville; P. and S., Balt., 1907	1907	1909
Pittman, R. L., Fayetteville; Jeff. Med. Coll., 1910; U. N. C.	1910	1912
Pittman, W. A., Fayetteville; Temple Univ., 1932; Wake Forest	.....	1934
Rainey, W. T., Fayetteville; Univ. Coll. of Med., Richmond, 1913	1913	1916
Robertson, J. N., Fayetteville; Med. Coll. of Va., 1923	1923	1924
Shaw, J. A., Fayetteville; Univ. Pa., 1923; U. N. C.	1923	1926
Verdery, W. C., Fayetteville; Univ. of Ga., 1915	1920	1921

CURRITUCK—SEE PASQUOTANK-CAMDEN-CURRITUCK-DARE

DARE—SEE PASQUOTANK-CAMDEN-CURRITUCK-DARE

DAVIDSON COUNTY SOCIETY

President:	.....	.....
Secretary: P. M. Sherrill, Thomasville; Vanderbilt Univ. 1931	1935	1937
Alexander, G. T., Thomasville; Emory Univ., 1922	1933	1934
Andrew, John M., Lexington; N. Y. Univ. and Bellevue Hosp. Med. Coll., 1932; U. N. C.	1932	1934
Block, M. E., Lexington; Tulane Univ.	1933	1937
Cathell, E. J., Lexington; Emory Univ., 1930	1930	1932
Clyatt, Claude Eugene, Denton; Univ. of Ga., 1911	1923	1924
Craven, Earle, Lexington; Johns Hopkins Med., 1929	1932	1935
Craven, Jean, Lexington; Johns Hopkins, 1930	1933	1935
Farrington, R. K., Thomasville; Univ. Cin., 1925; U. N. C.	1925	1927
Gambrell, Grover C., Lexington; Univ. of Ga., 1912	1923	1924
Griffis, J. W., Denton; Med. Coll. Va., 1932	1934	1937
Hunt, W. Bryce, Lexington; Univ. of Md., 1923; Wake Forest	1923	1924
Jennings, R. G., Thomasville; N. C. Med. Coll., 1913	1913	1920
Lancaster, F. J., Lexington; Jeff. Med. Coll., 1922; Wake Forest	1922	1924

Name and Address	Licensed	Joined State Society
Leonard, J. C., Jr., Lexington; Jeff., 1928	1928	1931
Mock, Frank Lowe, Lexington, Rt. 3; N. C. Med. Coll., 1908	1908	1911
Phillips, C. H., Thomasville; Balt. Univ. School of Med., 1892	1893	1911
Redwine, J. Dan, Lexington; Emory Univ., 1931	1931	1934
Sharpe, C. R., Lexington; Jeff. Med. Coll., 1914; Wake Forest	1914	1917
Smith, J. A., Lexington; N. C. Med. Coll., 1915	1915	1917
Smith, William Gordon, Thomasville; Tulane Univ., 1927; U. N. C.	1927	1928
Terry, J. R., Lexington; Univ. of Louisville, 1911	1912	1912
Vestal, Willis J., Lexington, (Hon.); P. and S., Balt., 1883	1889*	1893
Zimmermann, Robert U., Welcome; N. C. Med. Coll., 1901	1901	1904

DAVIE COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Byerly, A. B., Cooleemee, (Hon.); Univ. College of Med., Richmond, 1896; U. N. C.	1896	1904

DUPLIN COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Robinson, J. D., Wallace; Univ. of Md., 1915	1915	1917
Williams, Jas. M., Warsaw; Univ. of Md., 1902	1902	1902

DURHAM-ORANGE MEDICAL SOCIETY

President: Clarence E. Gardner, Jr., Durham; Johns Hopkins, 1928	1932	1932
Secretary: W. M. Watkins, Durham; Jeff. Med. Coll., 1923	1923	1925
Alyea, Edwin P., Durham; Johns Hopkins Med. Sch., 1923	1930	1930
Anderson, W. B., Durham, Johns Hopkins, 1924	1927	1927
Andrew, Lacey Allen, Jr., Durham; U. N. C. and Duke, 1932	1932	1936
Berryhill, Walter Reece, Chapel Hill; Harvard Med. Sch., 1927; U. N. C.	1928	1934
Bitting, Numa D., Durham; Jeff. Med. Coll., 1907; U. N. C.	1907	1909
Boone, W. H., Durham, (Hon.); N. C. Med. Coll., 1902	1902	1904
Boone, W. W., Durham; Jeff. Med. Coll., 1923; U. N. C.	1923	1925
Bowles, Francis N., Durham; Med. Coll. of Va., 1924	1924	1926
Brinkley, H. M., Durham; Jeff. Med. Coll., 1919; U. N. C.	1919	1923
Bullitt, J. B., Chapel Hill; Univ. of Va., 1897	1914	1915
Byrnes, Thomas H., Durham; Med. Coll. of S. C., 1926	1932	1932
Cekada, Emil Bognoir, Durham; Johns Hopkins, 1929	1934	1934
Cooper, A. Derwin, Durham; Geo. Washington Univ., 1931	1933	1934
Coppridge, W. M., Durham; Jeff. Med. Coll., 1918; U. N. C.	1919	1920
Crispell, R. S., Durham; Cornell Univ., 1920	1933	1934
Davison, Wilburt C., Durham; Johns Hopkins, 1917	1927	1927
Eagle, Watt W., Durham; Johns Hopkins, 1925	1929	1930
Fassett, Burton W., Durham; Balt. Med. Coll., 1898	1899	1909
Felts, Robert S., Durham; Univ. Maryland, 1898	1899	1909
Fields, Leonard E., Chapel Hill; Univ. of Pa., 1929; U. N. C.	1929	1931
Forbus, Wiley D., Durham; Johns Hopkins, 1923	1933	1935
Goudge, Mabel E., West Durham; Ohio State Univ., 1922	1925	1927
Hamblen, E. C., Durham; Univ. of Va., 1928	1931	1931
Hanes, F. M., Durham; Johns Hopkins, 1908	1916	1917

* Registered.

Name and Address	Licensed	Joined State Society
Hansen-Pruss, O. C. E., Durham; Johns Hopkins, 1924	1930	1931
Hardee, W. P., Durham; Jeff. Med Coll., 1912; U. N. C.	1912	1924
Hart, Deryl, Durham; Johns Hopkins, 1921	1929	1930
Hayes, R. B., Hillsboro; Univ. of Md., 1906	1910	1917
Hedgepeth, E. McG., Chapel Hill; Univ. of Penn., 1931; U. N. C.	1931	1934
Hicks, Calvin S., Durham, (Hon.); Univ. of Md., 1904	1904	1904
Holloway, Joseph C., Durham; Tulane Univ., 1927; U. N. C.	1927	1929
Holloway, Robert Lee, W. Durham, (Hon.); Med. Coll. of Va., 1893	1893	1901
Johnson, N. M., Durham, (Hon.); Wash. Univ. Sch. of Med., 1877	1889	1879
Johnston, Christopher, Durham; Johns Hopkins, 1926	1930	1930
Jones, Robt. Randolph, Jr., Durham; Johns Hopkins, 1928	.....	1933
Jones, Thomas T., Durham; Johns Hopkins, 1932	1934	1935
Kelly, Wm. H., Durham; Univ. of Ga., 1926	1935	1936
Kerns, T. C., Durham; Univ. of Pa., 1927; U. N. C.	1911	1912
London, A. H., Durham; Univ. of Pa., 1927; U. N. C.	1927	1930
McBryde, Angus M., Durham; Univ. of Pa., 1928	1931	1932
McCutcheon, W. B., Durham; Med. Coll. of Va., 1921	1921	1924
McKee, Lewis Middleton, Durham; U.N.C. & Temple Univ., 1933	1934	1934
McPherson, S. D., Durham, (Hon.);Univ. of Md., 1903; U. N. C.	1903	1904
Mangum, C. S., Chapel Hill; Jeff. Med. Coll., 1894; U. N. C.	1896	1898
Manning, I. H., Chapel Hill, (Hon.); Long Island Coll. Hosp., N. Y., 1897; U. N. C.	1899	1901
Markham, Blackwell, Durham; Harvard Med. Coll., 1922; U. N. C.	1922	1925
Nichols, R. E., Jr., Durham; Univ. of Pa., 1930; U. N. C.	1930	1932
Nichols, Rhodes E., Durham, (Hon.); Rt. 8; Va. Med. Coll., Richmond, 1890; U. N. C.	1890	1904
Orgain, Edward S., Durham; Univ. of Va., 1930	1934	1936
Perry, D. R., Durham; Jeff. Med. Coll., 1919; Wake Forest, 1917	1919	1922
Persons, Elbert Lapsley, Durham; Harvard Med. Sch., 1927	1931	1931
Powell, Albert H., Durham; Univ. of Ga., 1924	1925	1925
Raney, R. B., Durham; Harvard, 1930	1934	1935
Readling, Hubert F., Durham; Wake Forest and Emory Univ., 1934	.....	1935
Reeves, Robert J., Durham; Baylor Univ., 1924	1930	1930
Riggsbee, A. E., Durham; Univ. of N. C., 1909	1909	1911
Roberson, Foy, Durham; Jeff. Med. Coll., 1909; U. N. C.	1909	1912
Roberts, Bryan N., Hillsboro; Univ. of Md., 1925; U. N. C.	1925	1926
Roberts, B. W., Durham; Univ. of Md., 1924; U. N. C.	1924	1927
Robertson, E. M., Durham; Tulane Univ., 1912; U. N. C.	1912	1913
Rose, A. S., Chapel Hill; Univ. of N. C., B.S., 1930; Harvard Med., 1932	1932	1935
Ross, George H., Durham, (Hon.); Univ. Tenn., 1899	1899	1904
Ross, Robert A., Durham; Univ. of Pa., 1922; U. N. C.	1922	1925
Ruffin, J. M., Durham; Univ. Va., 1926	1930	1931
Schuler, J. E., East Durham; Med. Coll. of Va., 1914	1920	1922
Shands, Alfred Rives, Jr., Durham; Univ. of Va., 1922	1929	1930
Smith, Annie T., Durham; Univ. of Ill., 1923; U. N. C.	1925	1926
Smith, D. T., Durham; Johns Hopkins, 1922	.....	1931
Speed, J. A., Durham; Jeff. Med. Coll., 1914	1914	1916
Spikes, N. O., Durham; Jeff. Med. Coll., 1924; U. N. C.	1924	1927
Sprunt, Douglas H., Durham; Yale Med. School, 1927	1934	1935
Stanford, Lois Foote, Durham; Univ. of Pa., 1921	1923	1924
Stanford, W. R., Durham; Univ. of Pa., 1919; U. N. C.	1919	1923
Strowd, W. A., Durham; Univ. of N. C., 1909	1909	1926

Name and Address	Licensed	Joined State Society
Sweaney, H. M., Durham; Univ. of Pa., 1919	1919	1920
Turnbull, A., Durham; Univ. of Manitoba, 1929	1936	1937
Tyler, E. R., Durham; Jeff. Med. Coll., 1923; U. N. C.	1923	1927
Watkins, G. T., Durham; Jeff. Med. Coll., 1915; Wake Forest	1915	1917
Wilkins, R. B., Durham; N. C. Med. Coll., 1913	1913	1915

EDGECOMBE-NASH COUNTIES SOCIETY

President: A. C. Norfleet, Tarboro; Univ. of Pa., 1924; U. N. C.	1925	1927
Secretary: J. Allen Whitaker, Rocky Mount; Temple, 1933	1934	1935
Anderson, R. S., Rocky Mount; Univ. of Md., 1924; U. N. C.	1924	1932
Bass, Spencer P., Tarboro; Univ. of Va., 1906	1907	1909
Bailey, C. W., Rocky Mount	.....	1930
Battle, Margaret White, Rocky Mount; Univ. of Mich., 1933	1936	1937
Battle, N. P., Rocky Mount; Univ. of Pa., 1926; U. N. C.	1930	1931
Boice, E. S., Rocky Mount; Univ. of Pa., 1909	1914	1915
Brantley, Hassell, Spring Hope; Jeff. Med. Coll., 1888	1888	1901
Brantley, J. C., Spring Hope; Jeff. Med. Coll., 1916	1916	1922
Coppedge, T. O., Nashville; Coll. of Phys. and Surg., Balt., 1908; U. N. C.	1909	1917
Crumpler, James Fulton, Rocky Mount; Bellevue Hosp. Med. Sch., 1930	1930	1935
Cutchin, J. Henry, Whitakers; Univ. Coll. of Med., Rich., 1911; U. N. C.	1911	1915
Daughtridge, A. L., Rocky Mount; Univ. of Md., 1924; U. N. C.	1924	1924
Deans, A. W., Battleboro; Med. Coll. of Va., 1915	1915	1917
Fleming, M. I., Rocky Mount; Jeff. Med. Coll., 1904; U. N. C.	1906	1919
Jones, W. S., Nashville; 1927; Wake Forest, 1925	1927	1927
Justa, Samuel H., Macclesfield; Med. Coll. of Va., 1933	1934	1934
Kornegay, Lemuel W., Rocky Mount, (Hon.); N. C. Med. Coll., 1906	1906	1906
Lane, John L., Rocky Mount; N. C. Med. Coll., 1906	1906	1914
Looney, J. J. W., Rocky Mount; Univ. of Va., 1917	1917	1919
Martin, J. H., Red Oaks; Univ. of Nashville, 1903	1904	1916
Noell, R. H., Rocky Mount; Univ. of Md., 1916	.....	1920
Parks, L. L., Tarboro; Vanderbilt Univ., 1928	1936	1936
Perry, E. M., Rocky Mount; P. & S., Balt., 1907	1907	1920
Raby, J. G., Tarboro; Univ. Coll. of Med., 1911	1911	1912
Roberson, E. L., Tarboro	.....	.....
Royster, Thos. H., Tarboro; Univ. Coll. of Med., 1908; OALR	1908	1914
Smith, C. T., Rocky Mount; Univ. of Pa., 1918; U. N. C.	1918	1920
Speight, J. A., Rocky Mount; Univ. of La., 1914; U. N. C.	1915	1916
Staley, S. Walter, Rocky Mount; Med. Coll. of S. C., 1901; U. N. C.	1901	1914
Stone, M. L., Rocky Mount; Univ. of Pa., 1924; U. N. C.	1928	1929
Thorp, A. T., Rocky Mount; Univ. of Pa., 1921; U. N. C.	1921	1923
Vann, J. R., Spring Hope; Jeff. Med. Coll., 1917	1917	1919
Willis, B. C., Rocky Mount; Med. Coll. of Va., 1909	1916	1916

FORSYTH COUNTY SOCIETY

President: G. C. Cooke, Winston-Salem; Univ. of Md., 1919; U. N. C.	1919	1920
Secretary: Paul A. Yoder, Winston-Salem; Univ. Pa., 1923; U. N. C.	1923	1925
Adams, Carlton N, Winston-Salem; Duke Univ., 1932	1936	1937
Ader, O. L., Walkertown; Univ. of Pa., 1925	1925	1927
Beavers, J. W., Kernersville; Univ. of Pa., 1930; Wake Forest	1930	1935

Name and Address	Licensed	Joined State Society
Benbow, Edgar V., Winston-Salem; Jeff. Med. Coll., 1925	1925	1927
Bowers, M. A., Winston-Salem; Tulane Univ., 1911; U. N. C	1911	1914
Brooks, E. Bruce, Winston-Salem; Duke, 1933	1935	1936
Butler, Leroy J., Winston-Salem; Med. Coll. of Va., 1915	1920	1921
Carlton, Romulus L., Winston-Salem, (Hon.); Univ. of Md., 1906	1906	1906
Casstevens, J. C., Clemmons; Va. Med. Coll., 1926; Wake Forest, 1924	1926	1927
Cook, J. L., Winston-Salem; Med. Coll. Pa., 1925	1925	1927
Couch, V. F., Winston-Salem; P. and S., New York, 1911; Wake Forest	1911	1919
Craig, S. D., Winston-Salem; Tulane Univ., 1908	1911	1912
Dalton, Wm. N., Winston-Salem, (Hon.); N. C. Med. Coll., 1904	1904	1905
Davis, Thos. W., Winston-Salem, (Hon.); S. C. Med. Coll., 1898; U. N. C	1899	1899
DeLaney, C. O., Winston-Salem; Jefferson, 1919; U. N. C	1919	1922
Dodge, Eva F., Winston-Salem; Med. Coll. Univ. of Md., 1925	1932	1932
Drummond, C. S., Winston-Salem; 1930	1933	1933
Fearington, J. C. P., Winston-Salem; Rush Med. Coll., 1930; U. N. C.	1933	1934
Garvey, Fred K., Winston-Salem; Univ. of Cincinnati, 1925; U. N. C.	1925	1933
Garvey, R. R., Winston-Salem; N. C. Med. Coll., 1915	1915	1919
Gilbert, E. L., Winston-Salem; Univ. of Tenn., 1932	1935	1936
Goswick, H. W., Jr., Winston-Salem; Univ. of Tenn., 1931	1934	1935
Grimes, W. L., Winston-Salem; Johns Hopkins,1910	1910	1915
Hart, O. J., Winston-Salem; Med. Coll. of S. C., 1925.	1930	1932
Hege, J. Roy, Winston-Salem; Univ. of Md., 1916; U. N. C	1916	1917
Helsabeck, B. A., King; Med. Coll. Va., 1931	1931	1936
Helsabeck, Chester J., Walnut Cove; Univ. of Md., 1919	1919	1936
Helsabeck, R. S., King; N. C. Med. Coll., 1913	1913	1936
Hurdle, S. W., Winston-Salem; Jeff. Med. Coll., 1914	1914	1915
Johnson, Paul W., Winston-Salem; 1930, Univ. of Louisville	1932	1933
Johnson, Wingate M., Winston-Salem; Jeff. Med. Coll., 1908	1908	1911
Jones, Beverly N., Winston-Salem; Med. Coll. of Va., 1915	1915	1921
Jones, R. Rives, Winston-Salem; Med. Coll. of Va., 1923	1923	1925
Keiger, O. R., Winston-Salem; Univ. of Med., Richmond, 1911; U. N. C	1911	1915
Kerr, Jas. Edwin, Winston-Salem, (Hon.); Univ. of Md., 1897	1898	1898
Kirby, W. L., Winston-Salem; Vanderbilt, 1925	1926	1930
Lassiter, V. C., Winston-Salem; Emory Univ., 1925	1928	1929
Linville, Aaron Y., Winston-Salem, (Hon.); Univ. of N. Y., 1889	1889	1896
Long, Vann McKee, Winston-Salem; N. C. Med. Coll., 1906	1906	1908
McCants, C. H., Winston-Salem; Med. Coll. of S. C., 1925	1929	1931
McMillan, E. A., Winston-Salem; Univ. of Pa., 1933	1933	1937
Marshall, J. F., Winston-Salem; Univ. of Pa., 1931	1931	1935
Moore, R. A., Winston-Salem; N. C. Med. Coll., 1911	1911	1917
Munt, H. F., Winston-Salem; Med. Coll. Va., 1911	1914	1915
Ogburn, L. C., Winston-Salem; Jefferson, 1928	1928	1935
Paddison, Jno. Robt., Kernersville, (Hon.); Univ. of Md., 1902; U. N. C	1902	1904
Perkins, J. R., Winston-Salem; Va. Med. Coll., 1904	1910	1917
Pfohl, Samuel F., Winston-Salem, (Hon.); Univ. of Pa., 1894	1898	1898
Pool, B. B., Winston-Salem; Jeff. Med. Coll., 1923; Wake Forest	1923	1925
Rankin, S. W., Winston-Salem; Jeff. Med. Coll., 1912	1912	1914
Reeves, G. F., Walnut Cove; Med. Coll. of S. C., 1925	1925	1937

Name and Address	Licensed	Joined State Society
Rousseau, J. P., Winston-Salem; Univ. of Md., 1918; U. N. C.	1920	1920
Schallert, P. O., Winston-Salem; Univ. of Ill. Med. Dept., 1904	1911	1912
Simmons, R. R., Winston-Salem; Va. Med. Coll., 1917	1923	1924
Sink, V. Rex, Winston-Salem; Univ. of Pa., 1928; U. N. C.	1930	1935
Slate, John S., Winston-Salem, (Hon.); Univ. Coll. Med., Richmond, Va., 1900	1899	1904
Spainhour, Ellis H., Winston-Salem, (Hon.); Balt. Med. Coll., 1898	1898	1898
Speas, W. P., Winston-Salem; Med. Coll. of Va., 1912	1911	1912
Spencer, Wm. O., Winston-Salem, (Hon.); Jeff. Med. Coll., 1891	1891	1894
Sprunt, W. H., Jr., Winston-Salem; Univ. of Pa., 1918	1918	1925
Starling, H. M., Winston-Salem; Med. Coll. of Va., 1931	1931	1937
Stone, G. E., King; Med. Coll. Va., 1915	1915	1936
Street, C. A., Winston-Salem; Harvard, 1918	1918	1925
Strickland, Edward F., Winston-Salem, (Hon.); Univ. of New York, 1887; U. N. C.	1887	1893
Thompson, Edg. S., Winston-Salem; Univ. of N. Y., 1919	1919	1921
Tuttle, Reuben G., Winston-Salem; N. C. Med. Coll., 1909	1909	1913
Valk, A. deT., Winston-Salem; Johns Hopkins, 1910	1913	1914
Wall, R. L., Winston-Salem; Jeff. Med. Coll., 1912; Wake Forest	1912	1914
Whittington, Jas. B., Winston-Salem; N. C. Med. Coll., 1911	1911	1913
Wyatt, Wortham, Winston-Salem; Univ. of Pa., 1913; U. N. C.	1913	1916
Wylie, W. deK., Winston-Salem; Univ. of Va., 1924	1926	1928

FRANKLIN COUNTY SOCIETY

President: James E. Fulghum, Louisburg; Med. Coll. of Va., 1931; Wake Forest	1931	1934
Secretary: Wm. Clifton Perry, Louisburg; Emory Univ., 1934	1934	1936
Benton, Wayne J., Bunn; Syracuse Univ., 1934	1934	1936
Burt, S. P., Louisburg, (Hon.); P. and S., Balt., 1896	1896	1904
Cheves, W. G., Bunn; Jeff. Med. Coll., 1925; Wake Forest, 1923	1925	1933
Johnson, Harry H., Louisburg; Coll. of P. and S., Baltimore, 1915	1919	1919
Perry, A. H., Wood; Univ. of Md., and P. and S., Balt., 1924	1924	1925
Perry, H. G., Louisburg; P. and S., Balt., 1915	1915	1916
Yarborough, R. F., Louisburg, (Hon.); Geo. Wash. Univ., 1898	1899	1899

GASTON COUNTY SOCIETY

President:	.....	.....
Secretary: M. H. Allen, Cramerton; Emory Univ., 1929	1930	1931
Anders, McT. G., Gastonia, (Hon.); Md. Coll., 1901	1902	1902
Anthony, W. A., Gastonia	1932	1911
Blair, J. L., Gastonia; Atlanta Med. Coll., 1915	1920	1921
Cranford, J. F., Gastonia; Univ of N. C., 1909	1934	1935
Glenn, Charlie, Gastonia; Charleston Med. Coll., 1936	1936	1937
Glenn, H. F., Jr., Gastonia; Emory Univ., 1932	1932	1934
Glenn, Lucius N., Gastonia, (Hon.); Univ. of Md., 1897	1897	1904
Grigg, John R., Murphy; Univ. of Louisville, 1927	.....	1937
Groves, R. B., Lowell; Med. Coll. of Va., 1924	1924	1924
Hood, J. Sidney, Gastonia; Jeff. Med. Coll., 1907	1907	1910
Houser, Forest M., Cherryville; Univ. of Pa., 1928; U. N. C.	1929	1930
Jones, W. M., Gastonia; Med. Coll. S. C., 1922	1927	1928
Lyday, C. E., Gastonia; Atlanta Sch. Med., 1910	1910	1920
McAdams, C. R., Belmont; N. C. Med. Coll., 1912	1912	1916
McChesney, W. W., Gastonia; Med. Coll. Va., 1915	1926	1927

Name and Address	Licensed	Joined State Society
McDowell, Harold, Gastonia	.....	1936
McDowell, R. H., Belmont; Univ. of Md., 1929; U. N. C.	1930	1931
Miller, R. C., Gastonia; N. C. Med. Coll., 1909; U. N. C.	1918	1919
Moore, B. D., Mount Holly; Med. Coll. of Va., 1915	1915	1921
Patrick, L. N., Gastonia; Univ. of Md., 1909	1910	1913
Pugh, Charles H., Gastonia; N. C. Med. Coll., 1910	1910	1913
Quickel, John C., Gastonia; Univ. of Pa., 1932; U. N. C.	1932	1936
Reid, James W., Lowell; Jefferson, 1908	1908	1909
Rhyne, Robt. E., Gastonia; N. C. Med. Coll., 1907	1907	1908
Roberts, W. M., Gastonia; Tufts, 1925	1928	1929
Swann, Jos. F., Gastonia, (Hon.); P. and S., Balt., 1896	1896	1904
Wilkins, S. A., Dallas, (Hon.); Univ. of Ky., 1902	1903	1903

GATES COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Blanchard, T. W., Hobbsville; Med. Coll. of Va., 1911	1911	1919
Carter, Thomas L., Gatesville; Med. Coll. of Va., 1917	1917	1928

GRAHAM COUNTY SOCIETY

GRANVILLE COUNTY SOCIETY

President:	.....	.....
Secretary: S. M. Carrington, Oxford; Rush Med. Coll., 1931; U. N. C.	1931	1934
Clay, E. L., Oxford; Univ. of Kentucky, 1929	1929	1933
Elliott, J. C., Oxford; Univ. of Md., 1926; Wake Forest	1926	1928
Hays, B. K., Oxford, (Hon.); Univ. Coll. of Med., Va., 1894	1894	1897
Morris, Joseph A., Oxford, (Hon.); Vanderbilt Univ., 1890	1893	1899
Noblin, Roy L., Oxford; Med. Coll. Va., 1924	1924	1924
Taylor, R. W., Oxford; Tulane Univ., 1926; U. N. C.	1926	1928
Taylor, Wm. L., Oxford, (Hon.); Univ. of Va., 1900	1901	1901
Thomas, Wm. N., Oxford; Va. Med. Coll., 1911	1911	1914
Thompson, Joseph W., Creedmoor; Ky. Univ., Louisville, 1904	1907	1912
Winston, P. H., Clarksville; Va. Med. Coll., Va., 1929	.....	1929

GREENE COUNTY SOCIETY

President: W. E. Dawson, Hookerton; Jefferson, 1920; Wake Forest, 1918	1920	1922
Secretary: Everett H. Ellinwood; Snow Hill; Temple Univ., 1934	1935	1937
Carroll, F. W., Hookerton; Med. Coll. of Va., 1925; Wake Forest	1926	1927
Harper, J. H., Snow Hill, (Hon.); Jefferson, 1905	1906	1907
Murphy, W. B., Snow Hill, (Hon.); Univ. Coll. of Med., Va., 1903	1903	1905
Whittington, Wm. W., Snow Hill, (Hon.); Louisville Med. Coll., 1895	1895	1902

GUILFORD COUNTY SOCIETY

President: Philip W. Flagge, High Point; Wash. Univ., St. Louis, 1902	1905	1919
Secretary: Edward T. Harrison; High Point; Johns Hopkins Med. Sch., 1926	1926	1928
Ashworth, W. C., Greensboro, (Hon.); P. and S., Balt., 1892	1892	1894
Aydlett, H. T., Greensboro, (Hon.); Univ. of Va., 1894	1895	1907
Banner, A. C., Greensboro; Jeff. Med. Coll., 1920; U. N. C.	1920	1922

Name and Address	Licensed	Joined State Society
Banner, Chas. W., Greensboro, (Hon.); Univ. of Md., 1899	1899	1901
Battle, John T. J., Greensboro, (Hon.); P. and S., Balt., 1884	1884	1890
Berry, John, Greensboro; Jeff. Med. Coll., 1908; U. N. C.	1908	1920
Bonner, M. D., Jamestown; Univ. of Md., 1930	1930	1934
Bonner, O. B., High Point; Univ. of Md., 1917; U. N. C.	1920	1921
Bowman, H. P., Greensboro, (Hon.); Univ. of Tenn., 1894	1894	1905
Brockman, Harry L., High Point; Univ. of Pa., 1917; U. N. C.	1917	1921
Buie, R. M., Greensboro; Jeff. Med. Coll., 1914; Wake Forest, 1912	1914	1920
Burwell, John C., Jr., Greensboro; Duke Univ., 1933	1936	1937
Clary, Wm. T., Greensboro; Univ. of Penna., 1928; U. N. C.	1928	1934
Cole, Walter F., Greensboro; Johns Hopkins, 1909	1909	1910
Collings, Ruth M., Greensboro; Univ. of Pa., 1923	1926	1927
Cook, H. L., Greensboro; Jeff. Med. Coll., 1918; U. N. C.	1918	1920
Cozart, S. R., Greensboro; Med. Coll. of Va., 1923	1923	1925
Davis, R. B., Greensboro; Med. Coll. of Va., Richmond, 1915	1916	1917
Davis, P. B., High Point; Jefferson, 1926; U. N. C.	1926	1929
Dees, Ralph Erastus, Greensboro; Univ. of Md., 1906	1908	1909
Dees, Rigdon O., Greensboro; Univ. of Md., 1906	1907	1908
Dick, Julius Vance, Gibsonville; Univ. of N. C., 1907	1907	1908
Dunn, R. B., Greensboro; Univ. of McGill, 1933	1936	1937
Durham, C. W., Greensboro; Geo. Wash., Univ., 1927	1927	1929
Edwards, V. E., Greensboro; Univ. of Md., 1913	1913	1913
Fortune, Alex. F., Greensboro, (Hon.); Univ. Coll. of Med., Va., 1900; U. N. C.	1900	1904
Fox, N. A., Greensboro; Univ. of Pa., 1924; U. N. C.	1924	1926
Geddie, K. B., High Point; Jeff. Med. Coll., 1921; U. N. C.	1921	1923
Gilmore, C. M., Greensboro; Med. Coll. of Va., 1925; Wake Forest	1925	1926
Glascock, Joy H., Greensboro, (Hon.); Women's Med. Coll. of Balt., 1896	1896	1900
Gove, Anna M., Greensboro, (Hon.); Women's Med. Coll. of New York, Infirmary, 1892	1894	1896
Grayson, C. S., High Point; Geo. Wash. Univ., 1906	1907	1908
Groome, J. G., High Point; Univ. of Ohio, 1924; U. N. C.	1924	1925
Harney, J. N., High Point; Univ. Penn., 1921	.....	1937
Harden, R. N., Greensboro; Univ. of Pa., 1922; U. N. C.	1922	1924
Harper, F. T., Jr., Jamestown; Med. Coll. of Va., 1934; U. N. C.	1934	1936
Harrison, Edmund, Greensboro, (Hon.); Univ. Coll. of Med., 1896	1900	1900
Harvey, W. W., Greensboro; Emory Univ., 1920	1922	1923
Herring, R. A., Greensboro; Tulane, 1905	1923	1924
Holladay, L. W., High Point; Med. Coll. Va., 1929	1936	1937
Holt, D. W., Greensboro; Jeff. Med. Coll., 1918	1918	1920
Hudson, C. C., Greensboro; Univ. Coll. of Med. of Va., 1910	1918	1924
Jackson, Walter Leo., High Point; N. C. Med. Coll., 1911	1911	1913
Jones, Wm. M., Greensboro, (Hon.); Univ. of Md., 1903	1903	1903
Keith, Marion Y., Greensboro; Univ. of Md., 1923	1923	1927
Knight, Wm. P., (Hon.); Greensboro; Balt. Med. Coll., 1898	1898	1898
Lackey, M. A., High Point; N. C. Med. Coll., 1917	1923	1924
Le Bauer, M. L., Greensboro; Univ. of Va., 1929	1930	1932
Le Bauer, S. F., Greensboro; Univ. of Va., 1929	1930	1932
Little, H. L., Gibsonville; Wash. Univ., 1934	1934	1937
Lyday, R. O., Greensboro; Univ. of Pa., 1920; U. N. C.	1920	1927
Lyon, B. R., Greensboro; Columbia Univ., 1915	1920	1920
McAllister, Jean, Greensboro; Univ. Penn., 1933	1936	1937

Name and Address	Licensed	Joined State Society
McAnnally, Wm., J., High Point, (Hon.); Balt. Med. Coll., 1897	1896	1899
McCain, Walkup K., High Point; Jeff., 1929	1929	1930
McCain, Wm. R., High Point, (Hon.); Univ. of Md., 1897; U. N. C.	1898	1898
McDonald, A. M., Greensboro; Univ. Penn., 1928	1935	1937
McGee, J. M., Greensboro; Univ. of Pa., 1925; U. N. C	1927	1927
Maness, A. K., Greensboro; Jeff. Med. Coll., 1928; U. N. C	1928	1929
Mann, I. Thurman, High Point; Jeff. Med. Coll., 1912; U. N. C	1912	1915
Meadows, W. J., Greensboro, (Hon.); Med. Coll. of Ala., 1894	1899	1904
Moseley, Charles W., Greensboro, (Hon.); Balt. Med. Coll., 1893	1893	1896
Norment, W. B., Greensboro; Jeff. Med., 1922	1922	1932
Ogburn, H. H., Greensboro; Johns Hopkins Univ., 1913; U. N. C	1913	1914
Ownbey, Arthur D., Greensboro; Med. Coll. Va., 1920	1925	1927
Parker, H. R., Greensboro; Univ. of Syracuse, 1923; Wake Forest	1924	1925
Pate, F. J., Greensboro; Univ. of Md., and P. and S., Balt., 1908	1908	1915
Patterson, Fred M., Greensboro; Univ. of Pa., 1924; U. N. C	1924	1928
Perry, G. G., High Point; Med. Coll. of Va., 1933	1933	1934
Post, J. J., Greensboro; Columbia Univ., 1919	1925	1926
Prefontaine, E., Greensboro; Laval Univ., Quebec, 1927	1931	1934
Ravenel, S. F., Greensboro; Johns Hopkins, 1923	1923	1926
Reaves, W. P., Greensboro, (Hon.); Univ. of the South, 1903	1905	1907
Register, J. F., Greensboro; S. Car. Med. School, 1931	1936	1937
Reitzel, Claude E., High Point, (Hon.); P. and S., Atlanta, 1902	1902	1902
Rhudy, Booker E., Greensboro; Med. Coll. Va., 1916	1926	1927
Saunders, S. Stewart, High Point; Harvard Med School, 1924	1926	1927
Schoonover, R. A., Greensboro; Baltimore Med. Coll., 1905	1912	1912
Sharp, O. L., Greensboro; Jeff. Med. Coll., 1922	1924	1925
Sharpe, F. A., Greensboro; Univ. of Va., 1916	1916	1920
Shelburne, P. A., Greensboro; Univ. of Va., 1927	1928	1928
Shohan, Joseph, Greensboro; Coll. P. and S., Balt., 1901	1914	1924
Sikes, Henry, Greensboro; Jeff. Med. Coll., 1931	1933	1934
Slate, J. W., High Point; Univ. Coll. of Med., Rich., Va., 1900	1899	1925
Slate, M. L., High Point; Univ. of Md., 1931	1931	1934
Smith, Alick T., Greensboro; Med. Coll. of Va., 1908	.....	1913
Stanton, D. A., High Point, (Hon.); Vanderbilt Univ., 1887	1887	1891
Starr, H. F., Greensboro; Jeff. Med. Coll., 1916; U. N. C	1916	1917
Strickland, H. G., Greensboro; Univ. Maryland, 1930	1930	1937
Sumner, E. A., High Point; Baylor Univ., Tex., 1925	1926	1927
Tankersley, J. W., Greensboro; Jeff. Med. Coll., 1906; U. N. C	1906	1907
Taylor, F. R., High Point; Univ. of Pa., 1913	1913	1915
Taylor, Jas. T., Greensboro; Univ. of Mo.; Coll. of P. and S., Balt., 1908	1908	1910
Taylor, S. R., Greensboro; Univ. of Pa., 1921; U. N. C	1921	1924
Taylor, Wesley, Greensboro; U. of Mich., 1899	1925	1926
Thompson, C. D., High Point, (Hon); Univ. of Tenn., 1901	1901	1904
Tice, W. T., High Point; Jeff. Med. Coll., 1927	1927	1929
Warwick, H. C., Greensboro; Med. Coll. of Va., 1934	1934	1936
Whittington, Claude, Greensboro; Univ. of Md., 1927	1927	1929
Williams, John D., Guilford Station, (Hon.); Vanderbilt Univ., 1898	1898	1898
Williams, J. D., Jr., Stokesdale; W. Md., 1930; Temple, 1930	1931	1935
Wilson, Albert R., Greensboro, (Hon.); Jeff. Med. Coll., 1882; U. N. C	1882	1882
Wolfe, H. C., Greensboro; Med. Coll. of Va., 1917	1917	1920
Wolff, D. R., Greensboro; Jeff. Med. Coll., 1918; U. N. C	1918	1920

Name and Address	Licensed	Joined State Society
Wood, George T., High Point; Jeff. Med. Coll., 1928	1928	1935
Woodruff, Fred G., High Point; Med. Coll. of Va., 1917	1917	1919
York, Alexander A., High Point; Chattanooga Med. Coll., 1907	1907	1909

HALIFAX COUNTY SOCIETY

President: R. P. Beckwith, Roanoke Rapids; Univ. of Pa., 1911	1913	1916
Secretary: R. S. McGeachy, Weldon, (Hon.); Bellevue Hosp., 1894	1894	1895
Broun, M. S., Roanoke Rapids; Columbia University Coll. of P. S., 1919	1922	1923
Bunn, R. W., Enfield; Wake Forest, 1933; Temple Univ., 1935	.....	1937
Cashwell, R. L., Roanoke Rapids; Univ. of Md., 1931	1931	1937
Covington, J. M. C., Roanoke Rapids	.....	1933
Jarman, F. G., Roanoke Rapids; Univ. Coll. of Med., Va., 1911	1914	1916
Joyner, P. W., Enfield; Syracuse Univ., 1932; Wake Forest, 1930	1932	1935
Justice, L. H., Littleton; Med. Coll. of Va., 1916	1920	1920
Lassiter, H. G., Weldon; Jeff. Med. Coll., 1918; U. N. C.	1918	1920
Long, T. W. M., Roanoke Rapids; Univ. Coll. of Med., Va., 1908; U. N. C.	1909	1910
McDowell, W. K., Scotland Neck; Jefferson, 1931	1931	1934
Maddry, M. Crocker, Roanoke Rapids; Jeff. Med. Coll., 1931	.....	1937
Martin, J. W., Roanoke Rapids; Med. Coll. of Va., 1916	1919	1920
Neville, C. H., Scotland Neck; Tulane Univ., 1927	1927	1927
Nicholson, B. M., Enfield; Va. Univ. Coll. of Med., 1910	1910	1913
Palmer, Horace, Littleton; Alt. Sch. of Med., 1912	1912	1920
Pollock, David, Hobgood; Med. Coll. of Va., 1935	.....	1937
Smith, O. F., Scotland Neck; Univ. Coll. of Va., 1899; U. N. C.	1899	1904
Stephenson, Bennett E., Weldon; Med. Coll. of Va., 1935	.....	1937
Suiter, W. G., Weldon; Med. Coll. of Va., 1917	1917	1920
Taylor, Thos. Jefferson, Scotland Neck; Jeff. Med. Coll., 1934	.....	1937
Thigpen, H. G., Scotland Neck; Jeff. Med. Coll., 1917; U. N. C.	1917	1920
Weathers, Bahnson, Roanoke Rapids; Wash. Univ. Med. School, St. Louis, 1917	1921	1922
White, Francis W. M., Halifax; Richmond Med. Coll., 1924; Wake Forest	1924	1924

HARNETT COUNTY SOCIETY

President: Paul G. Parker, Erwin; Med. Coll. of Va., 1916	1916	1917
Secretary A. T. Wyatt, Lillington; Jeff. Med. Coll., 1919	1919	1927
Byrd, W. C., Angier; Wake Forest 1921; Jeff. Med. Coll., 1923	1923	1937
Corbett, C. L., Dunn; Emory Univ., 1927; Wake Forest	1927	1928
Fleming, Fred, Coats; Wake Forest, 1928	.....	1933
Halford, Jos. W., Lillington, (Hon.); Geo. Wash. Univ., 1904	1905	1905
Hicks, Isham Faison, Dunn, (Hon.); N. C. Med. Coll., 1902	1902	1904
Highsmith, Charles, Dunn, (Hon.); Balt. Med. Coll., 1898	1898	1898
Holt, Wm. P., Erwin, (Hon.); Jeff. Med. Coll., 1895	1895	1901
Holt, Wm. P., Jr., Erwin; Jeff. Med. Coll., 1926; U. N. C.	1926	1927
Hunter, W. B., Lillington; Univ. of Penn., 1913	1913	1937
McKay, Joseph F., Buie's Creek, (Hon.); S. C. Med. Coll., 1884	1885	1900
McLean, John W., Godwin, (Hon.); N. C. Med. Coll., 1902	1902	1906
Martin, J. F., Dunn; N. C. Med. Coll., 1905	1905	1918
Odell, J. W., Dunn; Med. Dept. Univ. of Ga., 1926	1928	1929
Wilson, S. Glenn, Angier; Med. Coll. Va., 1930	1930	1932

HAYWOOD COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: V. H. Duckett, Canton; Univ. of Pa., 1930; Wake Forest	1930	1932
Secretary: J. R. Westmoreland, Canton; Washington Univ., 1932; U. N. C.	1932	1934
Abel, J. F., Waynesville, (Hon.); Univ. of Balt., 1892	1893	1899
Johnson, W. C., Canton; Tulane Univ. of La., 1912; U. N. C.	1912	1917
Kirkpatrick, W. L., Waynesville; Univ. Vanderbilt, 1894	1894	1895
Lancaster, N. F., Waynesville; Med. Coll. of Va., 1931	1932	1933
McCracken, J. R., Waynesville, (Hon.); N. C. Med. Coll., 1902	1902	1903
McCracken, M. H., Asheville; Univ. Louisville, 1930; Wake Forest	1930	1933
Moore, Roy H., Canton; Washington Univ., 1931; U. N. C.	1931	1934
Osborne, Gladys H., Waynesville; Vanderbilt, 1932	1935	1936
Owen, M. L., Canton; Univ. of Pa., 1932	1932	1936
Owen, Robert H., Canton; Univ. of Pa., 1931; Wake Forest, 1929	1931	1935
Pate, J. F., Canton; Med. Coll. of S. C., 1927	1927	1928
Reeves, J. L., Canton; Vanderbilt, 1913	1913	1917
Roberson, Robt. S., Hazlewood; Med. Coll. of Va., 1930; Wake Forest	1930	1932
Russell, Jesse M., Canton; Univ. of Nashville, 1911	1911	1912
Sisk, C. N., Waynesville; Univ. of Nash., 1905	1922	1923
Smith, D. W., Waynesville; Harvard, 1931	1935	1936
Stretcher, R. H., Waynesville; Rush Med. Coll., Chicago, 1927	1927	1930
Stringfield, Samuel L., Waynesville, (Hon.); Jeff. Med. Coll., 1905; U. N. C.	1905	1907
Stringfield, Thomas, Waynesville, (Hon.); Vanderbilt Univ., 1898; U. N. C.	1898	1899
Stringfield, Thos., Jr., Waynesville; Univ. of So. Carolina, 1934	1934	1937

HENDERSON COUNTY SOCIETY

President:	.....	.....
Secretary: Fred O. Trotter, Hendersonville; Univ. of Minnesota, 1933	1934	1934
Allen, W. O., Hendersonville; Med. Coll. of S. C., 1925	1926	1926
Bliss, F. E., Fletcher; Coll. of Med. Evangelists, 1933	1933	1934
Brown, J. S., Hendersonville, (Hon.); Northwestern Univ., 1893	1894	1895
Brown, J. S., Jr., Hendersonville; Univ. of Tulane, 1925	1926	1927
Dixon, Guy E., Hendersonville, (Hon.); P. and S., St. Louis, 1903	1903	1903
Fauntleroy, Jas. W., Saluda; P. and S., Columbia	1900	1930
Fortescue, Wm. Nicholas, Hendersonville; Duke Med., 1934	1934	1936
King, I. Campbell, Flat Rock; S. C. Med. Coll., 1935	1936	1937
Kirk, W. R., Hendersonville, (Hon.); Central Univ., 1891	1901	1903
Russell, Lloyd P., Fletcher; Univ. of Nashville, 1901	1902	1903
Salley, E. McQueen, Hendersonville, (Hon.); Univ. of Md., 1905	1905	1906
Weddington, J. L., Hendersonville; Sou. Med. Coll., Atlanta, 1898	1925	1926
Woodcock, J. H., Hendersonville; Hosp. College of Med., 1892	1894	1899

HERTFORD COUNTY SOCIETY

President:	.....	.....
Secretary: Thos. G. Faison, Winton; Med. Coll. Va., 1932	1932	1937
Futrell, L. M., Murfreesboro; Va. Med. Coll., 1914; U. N. C.	1914	1918
Matheson, J. Gaddy, Ahoskie; Jeff., 1929; U. N. C.	1929	1931
Mitchell, Paul H., Ahoskie; Univ. Coll. of Med., Richmond, 1907	1907	1908
Ruffin, D. W., Ahoskie; Med. Coll. of Va., 1932	1932	1932

HOKE COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: A. L. Ormand, Sanatorium; Jefferson, 1930	1930	1935
Secretary: R. L. Murray, Raeford; Univ. of Md., 1923	1923	1925
Bethune, A. C., Raeford	.....	1928
Bittinger, S. M., Sanatorium; Geo. Wash. Univ., 1918	1924	1924
Brown, G. W., Raeford, (Hon.); Ky. School of Med., Louisville, 1898	1900	1900
McBrayer, L. B., Southern Pines, (Hon.); Louisville Med. Coll., 1889	1891	1900
McBrayer, R., Summitt, N. J.; Univ. of Pa., 1916	1916	1917
McCain, P. P., Sanatorium; Univ. of Md. and Coll P. and S., Balt., 1911	1914	1914
Matheson, R. A., Raeford; Jeff. Med. Coll., 1926; U. N. C.	1926	1928
Thomas, C. D., Sanatorium; Univ. of Indiana, 1926	1930	1930
Williams, J. H., Sanatorium; Jeff. Med. Coll., 1920	1920	1922

HYDE COUNTY SOCIETY

IREDELL-ALEXANDER COUNTIES SOCIETY

President: W. D. McClelland, Mooresville; Jeff. Med. Coll., 1913	1913	1917
Secretary: Chas. B. Herman, Statesville; Jeff. Med. Coll., 1923; U. N. C.	1923	1925
Bell, A. E., Mooresville, (Hon.); Univ. of Md., and Coll. of P. and S., 1897	1897	1904
Bittinger, C. L., Statesville; Univ. of Va., 1935	1936	1937
Clayton, M. B., Statesville; Univ. Louisville, 1917	1933	1935
Crouch, T. D., Stony Point; N. C. Med. Coll., 1909, and Univ. of Md., 1910	1909	1915
Davis, Jas. W., Statesville; Univ. of Pa., 1913; U. N. C.	1913	1915
Fleming, Frank R., Statesville; Jeff. Med. Coll., 1935	1935	1937
Goode, T. V., Statesville; Univ. Coll. of Med., Va., 1912	1912	1916
Grady, F. M., Mooresville; Univ. of Syracuse; Wake Forest, 1930	1932	1934
Hinson, Angus, Statesville; Univ. Va., 1931	1935	1936
Holbrook, J. Samuel, Statesville, Wake Forest, 1930	.....	1933
Little, Lonnie M., Statesville; Jeff. Med. Coll., 1925; U. N. C.	1925	1927
Long, H. F., Statesville, (Hon.); Balt. Med. Coll., 1891	1892	1893
Long, Wm. Matthews, Mocksville; Tulane Univ., 1933	1934	1934
McElwee, Ross S., Statesville; Univ. of Md., 1909	1909	1910
McLaughlin, J. E., Statesville, (Hon.); Univ. of Md., 1886	1886	1896
Rhyne, S. A., Statesville; N. C. Med. Coll., 1915	1915	1920
Robertson, J. M., Charles	.....	1934
Sharpe, Frank L., Statesville, (Hon.); Univ. of N. C., 1904	1904	1905
Shaw, L. R., Statesville; Med. Coll. of Va., 1930; Wake Forest	1930	1931
Sherrill, C. L., Statesville; N. C. Med. Coll., 1914; Wake Forest	1914	1915
Sloan, A. B., Mooresville; Med. Coll. of Va., 1924	1924	1926
Talley, J. S., Troutman; Univ. of N. C., 1909	1910	1917
Tatum, Roy C., Statesville; Jeff. Med., 1919; Wake Forest, 1916	1919	1920
Taylor, G. W., Mooresville; N. C. Med. Coll., 1906	1906	1917
Templeton, J. Y., Mooresville; Jeff. Med. Coll., 1912	1913	1927
Thurston, Asa, Taylorsville; Univ. of Md., 1909	1909	1914
Trivette, W. A., Houstonville; Med. Coll. of Va., 1916	1916	1925
Wilson, Frank E., Mooresville; Univ. Tenn., 1933	1935	1935

JACKSON COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: A. A. Nichols, Sylva; Univ. of Nashville, 1898	1904	1904
Secretary: Grover C. Wilkes, Sylva; N. C. Med. Coll., 1916	1916	1920
Candler, Chas. Z., Sylva; P. and S., Atlanta, 1901; U. N. C.	1901	1904
Hooper, D. D., Sylva; Univ. of Med., Va., 1905	1905	1905
Nichols, Asbury S., Sylva; Tenn. Med. Coll., 1906	1907	1913
Stoddard, James Kent, Cashiers; Johns Hopkins, 1916	1925	1935

JOHNSTON COUNTY SOCIETY

President:	.....	.....
Secretary: Robert D. Oliver, Selma; Univ. of Md., 1930	1930	1932
Booker, Edwin N., Selma; Univ. of Va., 1925	1925	1930
Davidian, Vartan A., Smithfield; Univ. Kiev, Russia	1929	1930
Duncan, S. A., Benson; Tulane Univ., 1924; Wake Forest, 1921	1924	1926
Eldridge, Harvey A., Benson; Med. Coll. of Va., 1934	1934	1936
Grady, Jas. C., Kenly, (Hon.); Balt. Univ. School of Med., 1887	1887	1890
Hinnant, Milford, Micro; Univ. Med., 1912	1912	1913
Person, J. B., Selma. (Hon.); Med. Coll. of Va., 1897	1897	1900
Upchurch, T. G., Smithfield; U. N. C.	.....	1935

JONES COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Bell, J. C., Maysville; P. and S., Balt., 1910	1915	1922
Page, B. W., Trenton; Tulane Univ., 1909	1909	1919

LEE COUNTY SOCIETY

President:	.....	.....
Secretary: George C. Chiles, Sanford; Med. Coll. of Va., 1926	1928	1928
Blue, Waylon, Jonesboro; Med. Coll. of Va., 1925	1925	1926
James, Arthur A., Jr., Sanford; Univ. of Pa., 1932	1932	1936
Knight, Floyd L., Sanford; Univ. of Va., 1924	1925	1926
Lutterloh, I. Hayden, Jr., Sanford; Jeff. Med. Coll., 1921; U. N. C.	1921	1922
McIver, Lynn, Sanford, (Hon.); Kentucky Univ., 1901; U. N. C.	1902	1902
Matthews, M. L., Sanford, (Hon.); Univ. of N. C., 1903	1903	1904
Sowers, Roy G., Jonesboro; Univ. of Md., 1923; Wake Forest	1923	1924

LENOIR COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Boney, Elwood R., Kinston; Univ. of Pa., 1926; U. N. C.	1926	1927
Carr, M. L., LaGrange; Med. Coll. of Va., 1916	1916	1920
Cranz, Oscar W., Kinston; Med. Coll. Va., 1931	1934	1936
Davis, Rachel D., Kinston; Women's Med. Coll. of Pa., 1932	1933	1934
Hardy, Ira M., Kinston, (Hon.); Med. Coll. of Va., 1901; U. N. C.	1902	1902
Keiter, W. E., Kinston; Vanderbilt	1935	1935
Lee, Mike, Kinston; Tulane Univ., 1926; Wake Forest, 1924	1926	1927
Lee, Thos. L., Kinston; Med. Coll. Va., 1926	1926	1927
Moseley, Z. V., Kinston; Va. Coll. of Med., 1913	1913	1914
Page, R. C., Kinston; Syracuse Univ., 1928	1935	1936
Parrott, M. C., Kinston; Tulane Univ., 1917; U. N. C.	1917	1919
Parrott, Wm. P. Kinston, (Hon.); Tulane Univ., 1899	1899	1901
Peery, Vance P., Kinston; Med. Coll. of Va., 1916	1917	1917

Name and Address	Licensed	Joined State Society
Register, F. M., Kinston, (Hon.); Ky. School of Med., 1893	1891	1904
Sabiston, Frank, Kinston; Univ. of Md., 1918; U. N. C.	1919	1926
Turrentine, Kilby P., Kinston; Rush Med. Coll., 1931; U. N. C.	1932	1933
Tyndall, R. G., Kinston; Univ. of Pa., 1928; Wake Forest	1928	1931
West, B. C., Kinston; Univ. of Pa., 1924; U. N. C.	1924	1926
West, C. F., Kinston; Univ. of Pa., 1917; U. N. C.	1917	1920
Whitaker, Paul F., Kinston; Med. Coll. of Va., 1922; U. N. C.	1922	1924
Wooten, Floyd P., Kinston; Jeff. Med. Coll., 1920; U. N. C.	1920	1923

LINCOLN COUNTY SOCIETY

President: W. V. Costner, Lincolnton; Jeff. Med. Coll., 1924; U. N. C.	1925	1927
Secretary: A. M. Cornwell, Lincolnton; Geo. Wash. Univ., 1927	1927	1928
Bandy, W. G., Lincolnton; Vanderbilt Univ., 1908	1912	1914
Crowell, L. A., Lincolnton, (Hon.); Balt. Med. Coll., 1892	1892	1898
Crowell, L. A., Jr., Lincolnton; Tulane Med. Dept., 1930; U. N. C.	1930	1930
Edwards, F. D., Lawndale, R. 1; Atlanta Med., 1914	1916	1919
Elliott, W. F., Lincolnton; Pa. Medico-Chir. Coll., 1916; U. N. C.	1916	1917
Gamble, J. R., Lincolnton; Univ. of Tenn., 1911	1911	1912
Hoover, C. H., Crouse, (Hon.); Chattanooga Med. Coll., 1900; Balt. Med. Coll., 1903	1903	1903
Jacocks, W. P., Delhi, India; Univ. of Pa., 1911; U. N. C.	1911	1913

MACON-CLAY COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Angel, Edgar, Franklin; Jeff. Med. Coll., 1928	.....	1932
Angel, Furman, Franklin; Jeff. Med. Coll., 1918; U. N. C.	1923	1924
Killian, Frank M., Franklin; Univ. of Louisville, 1929	1929	1930
Rogers, W. A., Franklin, (Hon.); Univ. of Nashville, 1898	1898	1898

MADISON COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....

MARTIN-WASHINGTON-TYRELL COUNTIES SOCIETY

President: W. F. Evans, Williamston;	.....	1936
Secretary: J. A. Eason, Williamston; Med. Coll. Va., 1932	1933	1934
Bray, T. L., Plymouth; Univ. of Md., 1916	1916	1919
Chaplin, S. C., Columbia; Wake Forest 1920; Univ. Pa.	1931	.....
Nelson, Robert J., Robersonville, (Hon.); Louisville Med. Coll., 1890	1890	1893
Papineau, A., Plymouth; Univ. of Penna., 1931	1933	1934
Pittman, E. E., Oak City; Med. Coll. of Va., 1919	1919	1920
Rhodes, James S., Williamston, (Hon.); Med. Coll. of Va., 1906	1906	1907
Saunders, Jos. H., Williamston, (Hon.); Univ. Coll. of Med., Va., 1905	1905	1909
Ward, Jesse E., Robersonville, (Hon.); Univ. of Md., 1904	1904	1905
Ward, Vernon Albert, Robersonville; Jeff. Med. Coll., 1908; U. N. C.	1908	1914
Winn, W. C., Williamston; Med. Coll. Va.	1935	1937

McDOWELL COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary: R. B. Butt, Marion; Emory Univ., Atlanta, 1920	1920	1921
Ashworth, B. L., Marion, (Hon.); P. and S., Balt., 1892	1893	1900
Johnson, John B., Old Fort; Univ. Louisville Med. Dept., 1905	1914	1914
Jonas, John F., Marion, (Hon.); Balt. Med. Coll., 1903	1903	1903
Justice, Gaston B., Marion; P. and S., Atlanta, 1907; U. N. C.	1907	1907
Kirby, Guy S., Marion, (Hon.); Univ. Coll. of Va., 1897	1896	1903
McIntosh, D. M., Old Fort; Med. Coll. of Va., 1904	1907	1909
McIntosh, D. M., Jr., Marion; Univ. of Pa., 1933	1935	1936
Miller, J. F., Marion; Med. Chi. Phila., 1906	1915	1919
Williams, Lester L., Marion; Md. Med. Coll., 1913	1913	1916
Wood, Frank, Marion; Univ. of Pa., 1928; U. N. C.	1931	1932
Wood, Martha, Marion; Univ. Pa., 1928; U. N. C.	1934	1935

MECKLENBURG COUNTY SOCIETY

President: J. A. Elliott, Charlotte; Univ. of Mich., 1914	1919	1920
Secretary: Stephen W. Davis, 501 Professional Bldg., Charlotte, N. C.; Univ. of Pa. Med School, 1927; U. N. C.	1927	1929
Abernathy, H. N., Charlotte, (Hon.); Louisville Med. Coll., 1894	1894	1899
Adams, J. R,. Charlotte; Univ. of Va., 1928	1932	1933
Alexander, J. M., Charlotte; McGill Univ., 1934	1934	1937
Alexander, Jas. R., Charlotte, (Hon.); Univ. of Md., 1894	1894	1899
Allan, William, Charlotte; P. and S., Balt., 1906	1906	1914
Ashe, J. R., Charlotte; Columbia Univ., 1911	1915	1915
Austin, D. R., Charlotte; Jeff. Med. Coll., 1917	1917	1918
Austin, Frederick DeCosta, Charlotte; N. C. Med. Coll., 1907	1917	1908
Barret, H. P., Charlotte; Univ. of Louisville, 1908	1917	1919
Barron, A. A., Charlotte; Vanderbilt Univ., 1909	1910	1910
Baxter, Oscar Dixon, Charlotte; Jeff. Med. Coll., 1924	1924	1928
Black, Geo. Wm., Charlotte; Med. Coll. of Va.; 1924	1924	1925
Blair, Andrew, Charlotte; U. of Pa., 1924	1925	1926
Blalock, B. K., Charlotte; Univ. of Md., 1913	1913	1917
Bost, T. C., Charlotte; Geo. Washington Univ., 1915	1920	1921
Bradford, W. B., Charlotte; Univ. of Pa., 1932	1932	1937
Bradford, W. Z., Charlotte; Univ. of Pa., 1928	1928	1930
Brenizer, A. G., Jr., Charlotte; Johns Hopkins, 1908, and Univ. of Heidelberg; U. N. C.	1911	1911
Britt, C. S., Charlotte; Emory Univ., 1920	1925	1926
Bunch, Charles, Charlotte; U. N. C., 1931	1931	1935
Chambers, P. J., Charlotte; Jeff. Med. Coll., 1929	1932	1933
Choate, A. B., Charlotte; Med. Coll. of Va., 1929	1929	1933
Craven, Thomas, Huntersville; Jeff. Med. Coll., 1917	1917	1918
Craven, W. W., Charlotte; Univ. of Md., 1903; U. N. C.	1904	1904
Crowell, Andrew J., Charlotte, (Hon.); Univ. of Md., 1893	1892	1894
Davis, T. M., Charlotte; Univ. of Md., 1914	1931	1933
DeArmon, J. McC., 4 McKinnon Bldg., Charlotte, (Hon.); Univ. of Md., 1886	1886	1887
Donnelly, Jno., Charlotte; Univ. of N. C., 1905	1905	1918
Faison, Elias, Charlotte; Emory Univ., 1929	1929	1933
Faison, Yates W., Charlotte; Harvard Univ., 1910	1910	1912
Ferguson, R. T., Charlotte; Univ. Coll. of Va., 1906	1909	1922
Fleming, L. E., Charlotte; Univ. of Pa., 1931; Wake Forest, 1929	1931	1934

Name and Address	Licensed	Joined State Society
Franklin, Ernest W., Charlotte; Univ. of Pa., 1930; U. N. C.	1930	1932
Gage, L. G., Charlotte; Univ. of Va., 1915	1921	1922
Gallant, Robert M., Charlotte; N. C. Med. Coll., 1915	1915	1916
Gaul, John Stuart, Charlotte; Medico-Chir., Phila., 1913	1922	1923
Gibbon, James W., Charlotte; Jeff. Med. Coll., 1918	1920	1921
Gibbon, Robert L., Charlotte, (Hon.); Jeff. Med. Coll., 1887	1887	1888
Hamer, W. A., Chadwick Station, Charlotte; Univ. of Md., 1930; Wake Forest	1930	1932
Hand, Edgar H., Charlotte; N. C. Med. Coll., 1907	1907	1913
Hart, V. K., Charlotte; Univ. of Pa., 1921	1924	1925
Hipp, Edw. R., Charlotte; Univ. of Va., 1918	1920	1921
Houser, O. J., Charlotte; N. C. Med. Coll., 1914	1914	1916
Hovis, L. W., Charlotte, (Hon.); N. C. Med. Coll., 1904; U. N. C.	1904	1906
Hunt, J. S., Charlotte; Vanderbilt Univ., 1929	1932	1933
Hunter, W. Myers, Charlotte; Georgetown Univ., 1905	1906	1908
Johnston, J. G., Charlotte; Med. Dept., Vanderbilt Univ., 1899	1913	1916
Jones, O. H., Charlotte, Columbia Univ., 1933	1933	1937
Kelly, Luther W., Charlotte; Univ. of Va., 1924	1926	1927
Kennedy, John P., Charlotte; Jeff. Med. Coll., 1915	1915	1920
King, Parks M., Charlotte, (Hon.); Bellevue Med. Coll., 1902	1902	1904
Lafferty, Robert H., Charlotte, (Hon.); N. C. Med. Coll., 1906	1906	1906
Leinbach, Robt. F., Charlotte; Univ. of Pa., 1907; U. N. C.	1907	1910
Lucas, Chas. De Forrest, Charlotte; Univ. Va., 1926	1934	1935
MacConnell, John W., Davidson; Univ. of Md., 1907	1908	1909
McCoy, Thos. M., Charlotte; N. C. Med. Coll., 1905	1906	1906
McKay, Hamilton W., Charlotte; N. C. Med. Coll., 1909; Jeff. Med. Coll., 1910	1911	1913
McKay, Robert W., Charlotte; Johns Hopkins, 1923	1928	1928
McKnight, R. B., Charlotte; Univ. of Pa., 1920; U. N. C.	1920	1928
McLaughlin, Calvin S., Charlotte, (Hon.); Univ. of Md., 1896	1896	1903
McLean, E. K., Charlotte; Univ. of Texas, 1919	1927	1928
McPhail, L. D., Charlotte, (Hon.); Univ. of Md., 1900; U. N. C.	1900	1902
Martin, Wm. F., Charlotte; Univ. of Md., 1920	1920	1923
Martin, W. J., Greensboro; Univ. of Va., 1890	1891	1919
Massey, C. C., Charlotte; Jeff. Med. Coll., 1923; U. N. C.	1923	1925
Matheson, James P., Charlotte, (Hon.); Univ. of Md., 1905	1902	1907
Matthews, Vann M., Charlotte; Univ. of Pa., 1918	1918	1921
Mauldern, Paul R., Kannapolis; N. Y. Univ., 1932	1932	1934
Mayer, W. B., Charlotte; Univ. of Pa., 1930	1932	1933
Miller, Oscar L., Charlotte; Atlanta Coll. of P. and S., 1912	1921	1922
Montgomery, J. C., Charlotte; Univ. of Pa., 1932	1935	1936
Moore, Alexander W., Charlotte; Univ. of Va., 1901; Univ. and Bellevue Hosp. Med. Coll., 1902	1912	1913
Moore, Oren, Charlotte; N. C. Med. Coll., 1911	1911	1912
Moore, R. A., Charlotte; Univ. of Pa., 1923	1924	1925
Motley, Fred Elliott, Charlotte; Univ. of Mich., 1922	1926	1927
Munroe, H. Stokes, Charlotte; N. C. Med. Coll., 1902; Jeff. Med. 1903	1902	1904
Munroe, J. P., Charlotte, (Hon.); Univ. of Va., 1885	1886	1890
Myers, Alonzo, Charlotte; N. C. Med. Coll., 1911; Bellevue Hosp. Med. Coll., 1916	1911	1920
Myers, John Q., Charlotte, (Hon.); N. C. Med. Coll., 1904	1904	1904
Nalle, B. C., Charlotte, (Hon.); Univ. of Va., 1903	1905	1905

Name and Address	Licensed	Joined State Society
Nance, C. L., Charlotte; N. C. Med. Coll., 1919	1921	1922
Neblett, H. C., Charlotte; Med. Coll. of Va., 1914	1921	1929
Newell, Leon B., Charlotte; Univ. of N. C., 1905	1905	1908
Newton, Howard L., Charlotte; Northwestern Univ., 1921	1923	1924
Nisbet, D. Heath, Charlotte; Harvard Med. Dept., 1917	1917	1920
Northington, J. M., Charlotte; Med. Coll. of Va., 1905	1909	1909
Nowlin, Preston, Charlotte; Univ. of Va., 1924	1929	1930
Peeler, Clarence N., Charlotte; N. C. Med. Coll., 1906	1906	1908
Petteway, George H., Charlotte; N. C. Med. Coll., 1913	1913	1914
Phillips, C. C., Charlotte; N. C. Med. Coll., 1912	1912	1917
Powell, H. S., Pineville; Univ. of Va., 1932	1932	1937
Pressly, Geo. W., Charlotte, (Hon.); Jeff. Med. Coll., 1892	1895	1896
Rankin, Watson S., Charlotte, (Hon.); Univ. of Md., 1901	1901	1901
Ranson, J. Lester, Charlotte; N. C. Med. Coll., 1911	1911	1912
Ray, F. L., Charlotte; Univ. of Va., 1919; Wake Forest, 1919	1919	1922
Ray, W. Turner, Charlotte; Wake Forest, 1931; Univ. of Md., 1934	1934	1937
Rea, G. L., Charlotte; N. C. Med. Coll., 1906	1920	1933
Robinson, C. W., Charlotte; Univ. of Pa., 1930; U. N. C.	1930	1932
Ross, Otho B., Charlotte; Univ. of Pa., 1909; U. N. C.	1909	1912
Ross, Thos. W., Charlotte; Jeff. Med. Coll., 1927; U. N. C.	.....	1930
Scruggs, W. Marvin, Charlotte; Univ. of Pa., 1914; Wake Forest	1914	1920
Selby, W. E., Charlotte; Temple Univ., 1934; U. N. C.	1934	1936
Seay, Hillis L., Huntersville; Vanderbilt Univ., 1930	1933	1934
Shirley, H. C., Charlotte; Johns Hopkins, 1918	1921	1922
Shull, J. Rush, Charlotte; Univ. of Pa., U. N. C., 1910	1910	1913
Sloan, H. L., Charlotte; Univ. of Pa., 1911	1913	1914
Smith, F. C., Charlotte; Jeff. Med., 1921; U. N. C.	1921	1925
Smith, Thomas A., Charlotte; N. C. Med. Coll., 1917	1917	1934
Sparrow, Thos. De L., Charlotte; Univ. of Pa., 1920	1920	1923
Squires, Claude B., Charlotte; Jeff. Med. Coll., 1919; U. N. C.	1919	1921
Summerville, W. M., Charlotte; Emory Univ., 1936	1936	1937
Taylor, Frank V., Charlotte; N. C. Med. Coll., 1915	1915	1936
Taylor, H. C., Charlotte, Chadwick Sta., Tenn. Med., 1886	1910	1915
Thompson, S. R., Charlotte; N. C. Med. Coll., 1914	1914	1915
Todd., L. C., Charlotte; Univ. of Mich., 1918	1920	1920
Tucker, John H., Charlotte, (Hon.); Univ. of Va., 1899	1901	1904
Tydeman, F. W. L., San Francisco, Calif.; N. C. Med. Coll., 1912	1912	1918
Wannamaker, Edward J., Jr., Charlotte; Univ. of Pa., 1921	1924	1924
Ward, W. C., Pineville; Univ. of Louisville; Wake Forest	1931	1934
Whisnant, Albert M., Charlotte, (Hon.); P. and S., Balt., 1893	1893	1899
White, Thomas Preston, Charlotte; Univ. of Pa., 1922	1924	1925
Winkler, Harry, Charlotte; Rush Med. Coll., 1929	1931	1931
Wishart, Wm. E., Charlotte; N. C. Med. Coll., 1911	1911	1911

MITCHELL COUNTY SOCIETY

President: Paul McBee, Bakersville, Virginia, 1930; Wake Forest, 1928	1930	1933
Secretarp:	.....	.....
Gouge, A. E., Bakersville; Med. Coll. of Va., 1917	1917	1920
Peterson, C. A., Spruce Pine; N. C. Med. Coll., 1907	1907	1908

MONTGOMERY COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: W. T. Harris, Troy; Med. Coll. of Va., 1925	1926	1927
Secretary:	.....	.....
Daligny, Charles, Troy, (Hon.); Univ. of Paris, 1878	1889	1891
Ingram, Charles B., Mt. Gilead, (Hon.); Jeff. Med. Coll., 1886	1886	1892
McMillan, J. M., Candor; P. and S., Atlanta, 1909	1909	1911
Nicholson, N. G., Jr., Mt. Gilead; N. C. Med. Coll., 1917	1917	1920
Rankin, Pressly R., Mt. Gilead; N. C. Med. Coll., 1910	1910	1912
Thompson, Alexander Frank, Troy, (Hon.); Med. Coll. of Indiana, 1895; U. N. C.	1895	1904

MOORE COUNTY SOCIETY

President: M. W. Marr, Pinehurst; Tufts Coll. Med. Sch., Boston, 1907	1909	1915
Secretary: R. G. Rosser, Vass; N. C. Med. Coll., 1909	1909	1917
Boseman, Claude Alfred; Pinebluff; Univ. Pa., 1927; U. N. C.	1927	1936
Bowen, J. P., Aberdeen; Univ. of Md., 1929	1932	1934
Chester, P. J., Southern Pines; N. C. Med. Coll., 1913	1913	1920
Davis, J. Franklin, High Falls; Med. Coll. of Va., 1912	1912	1914
Dickie, J. W., Southern Pines; Jeff. Med. Coll., 1918	1920	1921
Eckerson, Chas. Neil, Cameron; Med. Coll. Va., 1935	.....	1937
Felton, R. L., Jr. Carthage; Univ. of Pa., 1927; U. N. C.	1927	1929
Kemp, Malcolm Drake, Pinebluff; Wash. Univ., 1930; U. N. C.	1930	1936
McLeod, A. H., Aberdeen, (Hon.); Balt. Med. Coll., 1896; U. N. C.	1896	1904
McLeod, Vida C., Southern Pines; Baylor Univ., 1919	1931	1931
McLeod, W. G., Southern Pines; Baylor Univ., 1921	1926	1927
Milliken, J. S., Southern Pines; Jeff. Med. Coll., 1915; U. N. C.	1915	1916
Monroe, C. R., Pinehurst; Univ. of Md., 1924; U. N. C.	1925	1928
Mudgett, W. C., Southern Pines; Maryland Med. Coll., 1903	1908	1911
Overcash, W. E., Southern Pines; Univ. of Pa., 1926; U. N. C.	1926	1934
Shields, Henry B., Carthage, (Hon.); Atlanta Med. Coll., 1882	1887	1901
Street, M. E., Glendon, (Hon.); P. and S., Balt., 1893	1893	1902
Stutz, Greer, Southern Pines; Coll. of Va., 1934	1934	1936
Symington, John, Carthage; Univ. of Md., 1902	1927	1928
Willcox, J. W., West End, (Hon.); Univ. of N. C., 1906	1906	1906

NASH—SEE EDGECOMBE-NASH COUNTIES

NEW HANOVER COUNTY SOCIETY

President: J. E. Evans, Wilmington; Univ. of Md., 1916	1916	1916
Secretary: Donald Koonce, Wilmington; Univ. of Pa., 1929	1929	1934
Barefoot, Graham B., Wilmington; Jeff. Med. Coll., 1923; Wake Forest	1923	1924
Bellamy, Robert H., Wilmington, (Hon.); Jeff. Med. Coll., 1902; U. N. C.	1902	1902
Bulluck, Ernest S., Wilmington; Univ. of Md., 1911	1911	1911
Carpenter, G. R., Wilmington; Univ. of Va., 1934	.....	1937
Coddington, H. A., Wilmington; Univ. of Md., 1911	1915	1917
Cranmer, J. B., Wilmington, (Hon.); Univ. of N. C., 1905	1905	1906
Crouch, A. McR., Wilmington; Jeff. Med. Coll., 1916; U. N. C.	1916	1918
Dosher, Wm. S., Southport	.....	1934
Elliott, A. H., Wilmington; Jeff. Med. Coll., 1919	1919	1921

Name and Address	Licensed	Joined State Society
Fales, Robert, Wilmington; Jefferson	1932	1936
Farthing, L. E., Wilmington; Univ. of N. C., 1906	1906	1913
Fay, Oliver Frederick, Wilmington; Med. Coll. Va., 1930	.....	1935
Freeman, J. D., Wilmington; Med. Coll. of Va., 1918	1921	1922
Galloway, Walter Curtis, Wilmington, (Hon.); Washington Univ., 1874	1880	1880
Graham, Charles, Wilmington; Univ. N. C., 1930; Howard, 1932	1932	1937
Hare, R. B., Wilmington; Med. Coll. of S. C., 1930	1933	1934
Harriss, Andrew H., Wilmington, (Hon.); Medico-Chir., Phila., 1893	1894	1894
Hoggard, J. T., Wilmington; Univ. Med. Coll., Rich., 1906	1906	1922
Hooper, Joseph W., Wilmington, (Hon.); Univ. of Md., 1909	1912	1919
Jewett, Robert D., Wilmington, (Hon.); Univ. of Va., 1888	1890	1890
Johnson, Geo. W., Wilmington; Univ. of Pa., 1920; U. N. C	1920	1921
Koonce, S. Everett, Wilmington, (Hon.); P. and S., Balt., 1896	1896	1900
Lancaster, Wm. Jesse, Wilmington; Atlanta Sch. of Med	1911	1935
McEachern, Duncan, Wilmington; Med. Coll. Va., 1932; U. N. C	1932	1935
Mebane, W. C., Wilmington, (Hon.); N. C. Med. Coll., 1905; U. N. C.	1905	1906
Mebane, W. C., Jr., Wilmington; 1931; U. N. C	1932	1934
Moore, W. Houston, Wilmington; Jeff. Med. Coll., 1910; U. N. C	1910	1911
Murchison, D. R., Wilmington; Johns Hopkins, 1916	1922	1923
Robertson, James F., Wilmington; Univ. of Pa., 1913	1913	1916
Rourk, M. H., Shallotte; Univ. Minn., 1929	1930	1931
Sidbury, J. B., Wilmington; Columbia Univ., N. Y., 1912	1915	1916
Sloan, D. B., Wilmington; Univ. of Pa., 1914; U. N. C	1914	1920
Sullivan, Victor, Wilmington; 1931; Wake Forest, 1929	1931	1934
Wessell, John C., Wilmington, (Hon.); Univ. of Md., 1900	1900	1900

NORTHAMPTON COUNTY SOCIETY

President:	.....	.....
Secretary: W. I. Turlington, Jr., Jacksonville; Univ. of N. Y., 1929; U. N. C	1929	1930
Fleetwood, Jos. A., Conway; Tulane, 1921; Wake Forest, 1919	1921	1923
Lewis, H. W., Jackson, (Hon.); Univ. of N. Y., 1877	1889*	1887
Lister, J. L., Jackson; Med. Coll. of Va., 1896	1896	1909

ONSLOW COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Corbett, J. P., Swansboro; Wash. Univ. Sch. of Med., 1928; U. N. C.	1928	1930
Cox, E. L., Jacksonville, (Hon.); Univ. of Md., 1889	1889	1892
Henderson, John P., Jacksonville; Va. Med. Coll., 1918	1919	1921
Kendall, John H., Richlands; Coll. of Med. Evangelists, 1934	1935	1935
Sutton, Carl W., Richlands, (Hon.); Tulane; 1905; U. N. C	1905	1907

ORANGE—SEE DURHAM-ORANGE

PAMLICO COUNTY SOCIETY

President: D. A. Dees, Bayboro; Balt. Med. Coll., 1903	1903	1905
Secretary: J. J. Purdy, Oriental; Med. Coll. of Va., 1900	1914	1915
Daniels, O. C., Oriental, (Hon.); Med. Coll. of Va., 1903; U. N. C	1903	1906
McCotter, St. Elmo, Bayboro; P. and S., Atlanta, 1908	1908	1909

* Registered.

PASQUOTANK-CAMDEN-CURRITUCK-DARE COUNTIES SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....
Fearing, Isaiah, Elizabeth City, (Hon.); P. and S., Balt., 1896	1896	1904
Griggs, W. T., Poplar Branch, (Hon.); Univ. of Va., 1896	1896	1901
Johnston, W. W., Manteo; N. C. Med. Coll., 1913	1913	1920
Kenfield, H. W., Hatteras; Univ. of Mich., 1906	1924	1933
Peters, W. A., Elizabeth City; Med. Coll. of Va., 1915	1915	1916
Sawyer, W. W., Elizabeth City, (Hon.); Univ. of Md., 1903;U. N. C	1903	1904
Walker, H. D., Elizabeth City, (Hon.); Univ. of Md., 1902	1902	1902
White, W. H. C., Elizabeth City; Univ. of Va., 1922	1929	1929
Williams, Claude B., Elizabeth City, (Hon.); Univ. Coll. Med., Richmond, 1903	1903	1907

PENDER COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Taylor, W. I., Burgaw; N. C. Med. Coll., 1902	1904	1905

PERQUIMANS—SEE CHOWAN-PERQUIMANS

PERSON COUNTY SOCIETY

President: Austin F. Nichols, Roxboro; Univ. of N. C., 1908	1908	1909
Secretary: H. M. Beam, Roxboro; Columbia Univ., 1918	1918	1919
Gentry, Geo. W., Roxboro; Univ. of N. C., 1910	1910	1911
Lewis, S. V., Roxboro; Med. Coll. Va., 1916	1916	1936
Love, Bedford E., Roxboro, (Hon.); Univ. of Md., 1904	1904	1905
Merritt, John H., Woodsdale, Rt., 1; Univ. of N. C., 1906	1907	1908
Thaxton, B. A., Roxboro; Jeff. Med. Coll., 1914	1914	1916

PITT COUNTY SOCIETY

President:	.....	.....
Secretary: F P. Brooks, Greenville; Univ. of Mich., 1933	1933	1935
Armistead, D. B., Greenville; Med. Coll. Va., 1931; U. N. C	1935	1936
Barrett, J. M., Greenville; Univ. of Pa., 1926; U. N. C	1926	1927
Basnight, Thos. G., Stokes, (Hon.); Univ. of Md., 1904; U. N. C	1905	1907
Beasley, E. B., Fountain; Univ. of Pa. School of Med., 1911, U. N. C	1911	1915
Brown, W. M. B., Greenville; Med. Coll. Va., 1929	1929	1931
Crisp, S. M., Greenville; Univ. of Pa., 1923; U. N. C	1923	1925
Dixon, G. G., Ayden; Med. Coll. of Va., 1915; U. N. C	1915	1917
Ennett, N. T., Greenville; Med. Coll. Va., 1907	1932	1934
Frizzelle, M. T., Ayden; Univ. Coll. Med., Richmond, 1907	1907	1909
Garrenton, Connell, Bethel; Wake Forest, 1933; Univ. of Pa., 1935	1935	1937
Hammond, A. F., Grifton; Jeff. Med. Coll., 1934	1934	1937
Haar, F. B., Greenville; Jeff. Med. Coll., 1932	1932	1935
Liverman, J. S., Winterville	.....	1934
Mewborn, J. M., Farmville; Med. Coll. Va., 1932; U. N. C	1932	1935
Nobles, Jos. E., Greenville, (Hon.); Jeff. Med. Coll., 1899; U. N. C.	1899	1902
Pace, K. B., Greenville; Jeff. Med. Coll., 1914; U. N. C	1914	1920
Skinner, Louis Cotton, Greenville, (Hon.); Univ. of Md., 1901	1901	1903
Smith, Joseph, Greenville; Med. Coll. of Va., 1914	1916	1920
Taylor, Chas. W., Kings Park, N. Y., Med. Coll. Va., 1933	1933	1935

Name and Address	Licensed	Joined State Society
Tucker, Earl Van, Grifton; Med. Coll. of Va., 1930	1930	1935
Ward, Needham E., Greenville; Duke Univ. Med. Coll., 1932	1934	1934
Watson, Thomas M., Greenville; Tulane Univ., 1919; Wake Forest	1919	1920
Willis, W. M., Farmville; Med. Coll. of Va., 1914	1915	1924
Winstead, J. L., Greenville; Med. Sch. of Univ. Md., 1925; U. N. C.	1925	1930
Wooten, W. I., Greenville; Jeff. Med., 1920; U. N. C.	1920	1920

POLK COUNTY SOCIETY

President: M. C. Palmer, Tryon; Med. Coll. of S. C., 1910; U. N. C.	1911	1914
Secretary: John Z. Preston, Tryon; Temple Univ., 1934	1935	1937
Grady, Wm. Earle, Tryon, (Hon.); Univ. of Md., and P. and S., 1894	1895	1899
Jervey, A. J., Tryon; Med. Coll. of S. C., 1905	1923	1925
Smith, D. L., Saluda and Spartanburg, S. C.; S. C. Med. Coll., 1903	1926	1927

RANDOLPH COUNTY SOCIETY

President: Charles C. Hubbard, Farmer, (Hon.); Jeff. Med. Coll., 1888	1890	1900
Secretary: J. H. Soady, Asheboro; Toronto Univ., 1906	1924	1926
Barnes, J. T., Asheboro; Med. Coll. of Va., 1929	1929	1932
Barnes, Tiffany, Asheboro; Med. Coll. of Va., 1925; Wake Forest	1925	1927
Dalton, B. B., Liberty; Duke, 1932; U. N. C.	1933	1935
Johnson, J. R., Ramseur; Med. Coll. of Va., 1927; Wake Forest	1927	1929
Redding, Alex. H., Cedar Falls, (Hon.); Coll. of P. and S., Balt., 1887	1889*	1900
Sumner, G. H., Asheboro; Tulane Univ., 1923; U. N. C.	1923	1924
Sykes, R. P., Asheboro; Tulane Med. Coll., 1929	1929	1932

RICHMOND COUNTY SOCIETY

President: Z. F. Long, Rockingham; Univ. of Pa., 1928; U. N. C.	1928	1930
Secretary: A. C. Everett, Rockingham, (Hon.); Univ. of Md., 1897	1897	1903
Bardin, R. M., Rockingham; Tulane Univ., 1929	1934	1935
Bristow, C. O., Rockingham; Jeff. Med. Coll., 1918	1920	1921
Caddell, G. C., Hoffman; N. C. Med. Coll., 1912	1912	1930
Garrison, R. B., Hamlet; Univ. Md., 1933	1933	1935
Hatcher, M. A., Hamlet; Med. Coll. of Va., 1918	1920	1921
Henry, T. B., Rockingham; Columbia Univ. Coll. P. and S., N. Y., 1917; U. N. C.	1920	1921
Howell, W. L., Ellerbe; N. C. Med. Coll., 1910	1910	1911
James, W. D., Hamlet; Jeff. Med. Coll., 1908; U. N. C.	1908	1908
Kinsman, Henry F., Hamlet, (Hon.); Univ. of Vermont, 1894	1897	1904
Ledbetter, James McQ., Rockingham, (Hon.); Vanderbilt Univ., 1894; U. N. C.	1894	1903
McIntosh, W. R., Rockingham; N. C. Med. Coll., 1913	1916	1917
Milham, C. G., Hamlet; Jefferson, 1927; U. N. C.	1927	1930
Parsons, W. H., Ellerbe; N. C. Med. Coll., 1916	1916	1919
Terry, Wm. Calvin, Hamlet; N. C. Med. Coll., 1911	1912	1914
Webb, W. P., Rockingham; Med. Coll. of S. C., 1897	1897	1904

* Registered.

ROBESON COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: Claude T. Poole, St. Pauls; N. C. Med. Coll., 1909	1909	1913
Secretary: G. B. Walton, Chadbourne; Tulane Univ., 1930	1930	1935
Allen, G. C., Lumberton; Rush Med. Coll., 1932	1933	1934
Baker, Horace M., Lumberton; Harvard Med. School, 1917	1919	1919
Beam, R. S., Lumberton; Jeff. Med. Coll., 1912; U. N. C.	1912	1915
Benson, N. O., Lumberton; Med. Dept. Univ. of Ga., 1930	1933	1934
Bowman, E. L., Lumberton; Med. Coll. of Va., 1914	1914	1916
Britt, J. N., Lumberton; Atlanta Med. Coll., 1914	1923	1924
Brown, J. P., Fairmont, (Hon.); Univ. of Md., 1883	1889*	1893
Carmichael, Thaddeus W., Rowland; Ky. Univ. Med. Dept., 1904	1911	1919
Croom, R. D., Jr., Maxton; Med. Coll. Va., 1934	.....	1937
Faulk, J. G., Pembroke; Med. Coll. of Va., 1931; Wake Forest	1931	1932
Hedgepeth, Cary, Lumberton; Wake Forest, 1931; Northwestern Univ., 1933	1933	1936
Hedgpeth, L. R., Lumberton; Univ. of Md., 1933; Wake Forest	1933	1934
Hodgin, H. H., Red Springs; Univ. of Md., 1905; N. C. Med. Coll., 1906	1906	1907
Holmes, A. B., Fairmont; Jeff. Med. Coll. 1910; U. N. C.	1910	1914
Johnson, C. T., Red Springs; Jeff. Med. Coll., 1920; Wake Forest	1920	1922
Johnson, Thomas C., Lumberton, (Hon.); Med. Coll. of Va., 1903	1903	1903
Knox, John Jr., Lumberton; Univ. of Md., 1906	1907	1907
McClelland, Joseph O., Maxton; Med. Coll. of Va., 1908	1912	1913
McIntyre, Stephen, Lumberton; Jeff. Med. Coll., 1928; Wake Forest	1928	1930
McMillan, R. D., Red Springs; Univ. of Md., 1910; U. N. C.	1911	1912
Martin, J. A., Lumberton; Med. Coll. of Va., 1915	1915	1917
Meadows, J. H., Fairmont; Med. Coll. Va., 1934	1934	1936
Nash, J. Fred, St. Pauls; N. C. Med. Coll., 1914	1914	1916
Ricks, Leonard E., Fairmont, (Hon.); Med. Coll. of Va., 1896	1896	1913
Smith, John McNeill, Rowland; Jeff. Med. Coll., 1908; U. N. C.	1908	1909
Taylor, Andrew D., Lumberton; Univ. of Md., 1934	1934	1937
Townsend, R. G., St. Pauls; Tulane, 1927	1927	1934

ROCKINGHAM COUNTY SOCIETY

President: P. W. Fetzer, Reidsville; Univ. of Va. Dept. of Med., 1916; U. N. C.	1916	1920
Secretary: P. D. Rudd, Reidsville	.....	1935
Carter, P. C., Madison; Univ. of Md., 1916; Wake Forest, 1914	1916	1920
Casteen, Kenan, Leaksville; Univ. of Bellevue Hosp., Med. Coll., 1918; Wake Forest	1919	1921
Cozart, B. F., Reidsville; Med. Coll. of Va., 1931	1931	1931
Cummings, M. P., Reidsville; Jeff. Med. Coll., 1911; U. N. C.	1911	1914
Dillard, G. P., Draper; Bennett Med. Coll., 1916	1916	1919
Hester, William, Reidsville; Jeff. Med. Coll., 1926; U. N. C.	1929	1930
Jett, Samuel G., Reidsville; Univ. of the South, 1903	1908	1911
Johnson, W. A., Reidsville; N. C. Med. Coll., 1907	1909	1910
McAnally, James McG., Reidsville; Univ. of Pa., 1927; U. N. C.	1927	1927
McGehee, John Wm., Reidsville, (Hon.); Univ. of Md., 1904	1904	1905
Matthews, Wm. W., Leaksville; Chicago Coll. of Med. and Surg., 1913	1915	1918
Ray, John B., Leaksville, (Hon.); Balt. Med. Coll., 1898	1898	1898

* Registered.

Name and Address	Licensed	Joined State Society
Ray, S. P., Leaksville; Univ. of Pa., U. N. C.	1929	1931
Reynolds, Ernest, Mayodan; Wake Forest, 1931	.....	1936
Tuttle, A. F., Spray; N. C. Med. Coll., 1901	1901	1907
Tyner, Carl V., Leaksville; Univ. and Bellevue Hosp. Med. Coll., N. Y., 1916; Wake Forest, 1914	1916	1919
Watson, Paul S., Madison; Med. Coll. of S. C., 1928	1928	1928
Wilson, N. G., Madison; N. C. Med. Coll., 1914	1914	1914

ROWAN COUNTY SOCIETY

President:	.....	.....
Secretary: B. W. McKenzie, Salisbury; Jeff. Med. Coll., 1916	1916	1920
Black, O. R., Landis; N. C. Med. Coll., 1914	1914	1918
Brown, Clarence E., Salisbury; N. C. Med. Coll., 1918	1920	1921
Brown, G. A., Mt. Ulla, (Hon.); Univ. Coll. of Med., 1897	1897	1898
Busby, G. F., Salisbury; Johns Hopkins, 1932	.....	1936
Clement, Edward B., Salisbury, Hon.); Jeff. Med. Coll., 1906;(U. N. C.	1906	1913
Coleman, L. A., Salisbury; Univ. Alabama, 1912	1927	1935
Eagle, J. C., Spencer; Jeff. Med. Coll., 1923; Wake Forest, 1921; U. N. C.	1923	1925
Flemming, Giles M., Cleveland; Emory Univ., 1919	1919	1921
Frazier, J. W., Salisbury; Jeff. Med. Coll., 1924	1924	1927
Lowery, J. R., Salisbury; Univ. of Md., 1904; U. N. C.	1904	1913
McCutchan, Frank, Salisbury; Univ. of Va., 1920	1927	1928
Marsh, Frank B., Salisbury; Jeff. Med. Coll., 1919; U. N. C.	1919	1922
Monk, Henry L., Salisbury, (Hon.); Med. Coll. of Va., 1899; U. N. C.	1899	1903
Newman, Harold H., Salisbury; Johns Hopkins, 1913	1914	1916
Oliver, J. A., Rockwell;	.....	1937
Peeler, John H., Salisbury, (Hon.); Univ. Coll. of Med., 1899	1899	1904
Plyler, R. J., Salisbury; Univ. of Md., 1921	1924	1925
Robertson, L. H., Salisbury; Univ. of Pa., 1929; U. N. C.	1929	1931
Seay, T. W., East Spencer; Univ. of Md., 1921	1922	1924
Shafer, Irving E., Salisbury; N. C. Med. Coll., 1914	1914	1914
Sigman, Frederick G., Spencer; Univ. Med. Coll. of Va., 1909	1909	1910
Slate, Wesley C., Spencer; Univ. of Tenn., 1903	1903	1913
Spencer, Frederick B., Salisbury; Univ. of N. C., 1909	1909	1911
Stokes, Jas. Ernest, Salisbury, (Hon.); Univ. of Md., 1892	1900	1901
West, Robert M., Salisbury, (Hon.); Med. Coll. of Va., 1900	1900	1904
Whitfield, Wm. Cobb, Salisbury, (Hon.); Univ. of Md., 1884; U. N. C.	1884	1884
Woodson, Charles W., Salisbury; Columbia Univ., P. and S., 1904	1905	1907

RUTHERFORD COUNTY SOCIETY

President:	.....	.....
Secretary: C. F. Glenn, Ruthorfordton; Univ. of Louisville	1927	1928
Biggs, Montgomery H., Rutherfordton; Univ. of Pa., 1897	1907	1908
Bostic, Wm. C., Forest City, (Hon.); Chattanooga Med. Coll., 1899; N. C. Med. Coll., 1905	1905	1906
Bostic, W. C., Jr., Forest City; Univ. of Pa., 1926; Wake Forest	1926	1927
Crawford, Robt. H., Rutherfordton; Johns Hopkins, 1914	1920	1921
Eaves, Rupert S., Rutherfordton; Med. Coll. Va., 1932	1932	1933
Elliotte, Wm., Forest City; Univ. Ga., 1934	1934	1935
Gold, Charles F., Rutherfordton; Univ. of N. C., 1910	1910	1911

Name and Address	Licensed	Joined State Society
Harrill, L. B., Caroleen, (Hon.); Chattanooga Med. Coll., 1897	1902	1904
Head, W. T., Campobello, R. 4, S. C.; Atlanta Coll. P. and S., 1911	1911	1923
Hunt, J. F., Spindale; Univ. of Tenn., 1900	1900	1912
Knight, H. W., Bostic; Baltimore Med. Coll., 1903	.....	1934
Logan, F. W. H., Rutherfordton; N. C. Med. Coll., 1916	1916	1919
Lovelace, Thos. C., Henrietta; N. C. Med. Coll., 1917	1920	1920
Moss, G. O., Cliffside; Emory Univ., 1927; Wake Forest, 1925	1927	1929
Norris, Henry, Waverly Mills, S. C.; Univ. of Pa., 1897	1907	1908
Reid, George P., Forest City, (Hon.); Univ. Coll. of Med., Va., 1895	1894	1899
Robinson, James Lee, Rutherfordton; Univ. of Pa., 1932	1932	1936
Rucker, Adin Adam, Rutherfordton; Univ. of Md., 1908	1908	1909
Verner, Carl Hugh, Forest City; P. and S., Atlanta, 1912	1923	1927
Washburn, J. M., Lake Lure	.....	1936
Wiseman, P. H., Avondale; Med. Coll. of Va., 1925	1925	1926

SAMPSON COUNTY SOCIETY

President: D. M. Royal, Salemburg; Med. Coll. of Va.; Wake Forest, 1924	1926	1928
Secretary: A. N. Johnson, Garland; Univ. of Pa., 1933; U. N. C.	1933	1935
Ayres, J. S., Clinton; Jeff. Med. Coll., 1932	1932	1937
Brewer, J. Street, Roseboro; Jeff. Med. Coll., 1919; Wake Forest	1919	1921
Cox, R. L., Kerr; Med. Coll. Va., 1935	1935	1937
Crumpler, Paul, Clinton; Univ. of Tenn., 1907	1907	1908
Kerr, John D. Clinton; Univ. of Md., 1908; U. N. C.	1908	1910
Lee, J. Marshall, Newton Grove; Med. Coll. of Va., 1916	1920	1923
Matthews, James O., Clinton, R.F.D., (Hon.); Univ. Coll. of Med., Va., 1897	1897	1902
Nelson, W. H., Clinton; Univ. of Richmond, 1934	1934	1936
Parker, O. L., Clinton; Med. Coll. of Va., 1918	1918	1919
Sessoms, E. T., Roseboro; N. C. Med. Coll., 1915	1915	1917
Sikes, Gibson L., Salemburg, (Hon.); Univ. Coll. of Med., Va., 1900; U. N. C.	1900	1902
Sloan, Wm. H., Garland; Univ. of Md., 1916; U. N. C.	1916	1920
Small, Victor R., Clinton; Ohio State Univ. Med. Coll., 1916	1920	1921
Starling, W. P., Clinton; Univ. of Richmond, 1933	1933	1936

SCOTLAND COUNTY SOCIETY

President: Harry Summerlin, Laurinburg; S. C. Med. Coll., 1933	.....	1935
Secretary: L. T. Buchanan, Laurinburg; Jeff. Med. Coll., 1913; Wake Forest	1913	1917
Erwin, Evan A., Laurinburg; Med. Coll. of S. C., 1912	1912	1913
Gibson, John S., Gibson, (Hon.); Univ. of Md., 1905; U. N. C.	1905	1907
James, Albert W., Laurinburg; Jeff. Med. Coll., 1918	1918	1921
James, F. P., Laurinburg; Univ. of Pa., 1916; U. N. C.	1916	1917
John, Peter, Laurinburg, (Hon.); Univ. of Md., 1897; U. N. C.	1897	1904
Livingston, Everett Alex, Gibson; Univ. of Md., 1912	1912	1913
Pate, James G., Gibson; Univ. of Pa., 1916; U. N. C.	1916	1917
Reid, D. H., Wagram; Wash. Univ., 1901	1904	1937
Wilkes, Marcus B., Laurinburg; N. C. Med. Coll, 1912	1923	1923

STANLY COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: M. S. Dickson, Oakboro; Med. Coll. of S. C., 1927	1927	1929
Secretary: Madge B. Gaskin, Albemarle; Med. Coll. S. C., 1926	1933	1934
Allen, Jos. A., New London, (Hon.); Univ. Coll. of Med., Va., 1901	1901	1904
Bigler, V. L., Albemarle; Univ. Pittsburgh, 1925	1926	1927
Brunson, E. P., Albemarle; Jeff. Med. Coll., 1921	1922	1934
Campbell, Jas. I., Norwood; N. C. Med. Coll.	1898	1898
Dunlap, Lucius Victor, Albemarle; Univ. of N. C., 1909	1909	1910
Flythe, W. H., Norwood; Vanderbilt, 1933	1933	1937
Gaskin, J. S., Albemarle; Med. Coll. of S. C., 1925	1929	1931
Gaskin, Lewis R., Albemarle; Med. Coll. of S. C., 1921	1924	1926
Hathcock, Thomas A., Norwood, (Hon.); Univ. of Md., 1893; U. N. C.	1893	1904
Hill, Wm. Isaac, Albemarle, (Hon.); Univ. of Med., and P. and S., Balt., 1897	1897	1904
Lapsley, A. F., Badin; Med. Coll. Va., 1933	1936	1937
Laton, James F., Albemarle; N. C. Med. Coll., 1904	1904	1910
Lentz, C. M., Albemarle; N. C. Med. Coll., 1909	1909	1910
Moore, D. Bain, Badin; Univ. Coll. of Med., Va., 1913	1913	1915
Outlaw, J. K., Albemarle; Syracuse Univ. 1923; Wake Forest	1926	1934
Shaver, W. T., Albemarle; Univ. of Md., 1918	1920	1921
Tally, B. T., Albemarle; Jeff. Med. Coll., 1921; Wake Forest	1921	1922

STOKES—SEE FORSYTH COUNTY

President:	.....	.....
Secretary:	.....	.....

SURRY-YADKIN COUNTIES SOCIETY

President: Wharton G. Leak, East Bend; N. C. Med. Coll., 1900	1899	1904
Secretary: T. C. Britt, Mt. Airy; Jeff. Med. Coll., 1921; Wake Forest	1921	1925
Ashby, E. C., Mt. Airy; Univ. of Pa., 1914	1914	1916
Doughton, J. L., Sparta; Coll. P. and S., Md., 1893	1893	1935
Flippin, J. M., Pilot Mountain, (Hon.); Coll. P. and S., Md., 1884	1893*	1900
Flippin, Samuel T., Siloam, (Hon.); N. C. Med. Coll., 1898	1898	1898
Haywood, C. L., Jr., Elkin; Harvard, 1927	1929	1930
Lovill, Robert Jones, Mt. Airy; Univ. of Md., 1910; U. N. C.	1910	1912
Martin, Moir S., Mt. Airy; Univ. Coll. of Med., Va., 1905	1909	1916
Mitchell, R. C., Mt. Airy; Univ. of Pa., 1919; U. N. C.	1921	1923
Parks, Hugh, Elkin; Jeff. Med. Coll., 1921; U. N. C.	1921	1928
Royall, M. A., Elkin, (Hon.); P. and S., Balt., 1885; OALR	1889*	1904
Salmons, H. C., Elkin; N. C. Med. Coll., 1904	1904	1908
Smith, R. E., Mt. Airy; Univ. of Pa., 1923	1923	1926
Sykes, Ralph J., Mt. Airy; Med. Coll. Va.. 1934	.....	1934

SWAIN COUNTY SOCIETY

President:	.....	.....
Secretary: Z. P. Mitchell, Bryson City; Med. Coll. of Va., 1920; Wake Forest	1920	1921
Bacon, Harold Lyle, Bryson City; Northwestern Univ., 1934	1935	1936
Johnson, Edward J., Cherokee; Univ. of Iowa, 1930	.....	1936
Kirchberg, Roy Wm., Whittier	.....	1936
Leiby, G. M., Bryson City; Vanderbilt Univ., 1931; U. N. C.	1933	1934

* Registered.

TRANSYLVANIA COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....

TYRELL—SEE MARTIN-WASHINGTON-TYRELL

UNION COUNTY SOCIETY

President: R. H. Garren, Monroe, (Hon.); Univ. of Nashville, 1900	1901	1904
Secretary: C. A. Bolt, Marshville; Med. Coll., of S. C., 1926	1929	1929
Goudelock, Jno. J., Monroe; Med. Coll. S. C., 1923	1924	1924
Love, William M., Monroe; N. C. Med. Coll., 1915	1915	1919
Neal, John W., Monroe, (Hon.); N. Y. Univ. Med. Coll., 1884	1887	1904
Neece, K. E., Monroe; Washington Univ., 1929	1929	1934
Ormand, J. W., Monroe; Univ. of Cinn. Coll. of Med., 1926, U. N. C.	1926	1927
Smith, G. M., Monroe; N. C. Med. Coll., 1914	1914	1919

VANCE COUNTY SOCIETY

President: Vance B. Rollins, Henderson; Univ. of Pa., 1932; U. N. C.	1932	1936
Secretary: J. H. Wheeler, Henderson; Jeff. Med. Coll., 1918; U. N. C.	1918	1920
Bass, H. H., Henderson, (Hon.); Univ. Coll. of Med., 1899	1899	1900
Bass, H. H., Jr., Henderson; Univ. of Pa; U. N. C	1929	1930
Newcombe, A. P., Henderson; Jeff. Med. Coll., 1922; U. N. C	1922	1924
Newell, H. A., Henderson, (Hon.); P. and S., Balt., 1906	1906	1906
Royster, Thomas S., Henderson; Univ. of Pa., 1916; U. N. C	1916	1924
Upchurch, Robert T., Henderson; Jeff. Med. Coll., 1908	1908	1910

WAKE COUNTY SOCIETY

President: H. M. Vann, Wake Forest; Jeff. Med. Coll., 1917; Wake Forest	1920	1923
Secretary: M. D. Hill, Raleigh; Med. Coll. of Va., 1928; Wake Forest	1926	1931
Abernethy, Claude O., Raleigh, (Hon.); Univ. of N. C., 1906	1906	1907
Ashby, J. W., Raleigh; Univ. of Md., 1905	1921	1922
Barbee, G. S., Zebulon; Univ. of N. C., 1910	1910	1912
Brickhouse, H. M., Raleigh; Temple Univ., 1932; Wake Forest, 1930	1933	1937
Buffaloe, J. S., Garner, (Hon.); Balt. Med. Coll., 1900	1900	1904
Bugg, C. R., Raleigh; Johns Hopkins Med. Sch., 1922	1924	1925
Bulla, A. C., Raleigh; N. C. Med. Coll., 1915	1915	1918
Burt, B. W., Holly Springs, (Hon.); P. and S., Balt., 1886	1886	1904
Byrd, Allen L., Raleigh; Jeff. Med. Coll., 1936	1936	1937
Campbell, Alton C., Raleigh; Univ. of N. C., 1910	1910	1912
Carpenter, Coy C., Wake Forest; Syracuse Univ., 1924; Wake Forest	1924	1927
Caviness, V. S., Raleigh; Jeff. Med. Coll., 1921; U. N. C	1921	1925
Caviness, Zebulon M., Raleigh, (Hon.); Univ. of N. C., 1903	1903	1903
Coleman, G. S., Raleigh; Med. Coll. of Va., 1907	1907	1909
Combs, Jos. J., Raleigh; Columbia Univ. of C. and P., 1926	1926	1929
Cooper, G. M., Raleigh, (Hon.); Univ. Coll. of Med., Rich., 1905	1905	1904
Cozart, W. S., Fuquay Springs; Med. Coll. of Va., Rich., 1914	1914	1917
Dewar, Wm. B., Raleigh; Univ. of Pa., 1920; U. N. C	1920	1923
Dickinson, K. L., Raleigh; Univ. of Minn., 1932	1935	1936
Dodd, Benjamin R., Wake Forest; Wake Forest 1923; Univ. of Md. 1925	1925	1937

Name and Address	Licensed	Joined State Society
Edwards, C. J., Raleigh; Med. Coll. of Va., 1917	1921	1923
Eldridge, Chas. P., Raleigh; Univ. of Pa., 1926; U. N. C.	1926	1927
Finch, O. E., Raleigh; Jeff. Med. Coll., 1915; U. N. C.	1915	1917
Flowers, C. E., Zebulon; Med. Coll. of Va., 1913; U. N. C.	1915	1916
Fox, P. G., Raleigh; Med. Coll. of Va., 1922	1923	1929
Fox, Robert Eugene, Raleigh; Univ. of Pa., 1926	1926	1929
Gibson, M. R., Raleigh, (Hon.); Univ. of Md., 1905; U. N. C.	1905	1914
Glascock, H. G., Jr., Raleigh; U. N. C., 1932; N. Y. N., 1934	1934	1936
Goodwin, O. S., Apex; Jeff Med. Coll., 1923; U. N. C.	1923	1926
Greene, Phares Yates, Apex; Northwestern Univ. 1933; Wake Forest	1932	1934
Hall, W. D., Raleigh	.....	1934
Hamilton, John H., Raleigh; Med. Sch. of Harvard, 1916	1926	1926
Haywood, Hubert B., Jr., Raleigh; Univ. of Pa., 1909	1909	1910
Herring, E. H., Raleigh; Univ. of Pa., 1930; Wake Forest, 1928	1930	1934
Hester, Jos. R., Wendell; Univ. of N. C., 1910	1910	1912
Hicks, V. M., Raleigh; Jeff. Med. Coll., 1918; U. N. C.	1918	1921
Horton, M. C., Raleigh; Univ. Coll. of Med., Va., 1903	1911	1911
Horton, W. C., Raleigh, (Hon.); P. and S., Balt., 1897	1896	1904
Howle, Eugene B., Raleigh; Univ. of Md., 1910	1910	1937
Hunter, J. P., Cary; Jeff. Med. Coll., 1919; Wake Forest, 1917	1919	1921
Jones, Carey C., Apex; Jeff. Med. Coll., 1920; Wake Forest, 1918	1920	1923
Judd, Eugene C., Raleigh; Univ. of Pa., 1911; U. N. C.	1911	1912
Judd, Glenn B., Varina; Duke Univ., Vanderbilt Univ., 1932	.....	1935
Judd, James M., Varina, (Hon.); Balt. Med. Coll., 1897	1897	1901
King, E. S., Wake Forest; Jeff. Med. Coll., 1927; Wake Forest, 1925	1927	1930
Kitchin, Thurman D., Wake Forest; Jeff. Med. Coll., 1908; U. N. C.	1908	1908
Knox, J. C., Raleigh; Univ. of Md., 1924	1924	1932
Lamm, Isaac W., Raleigh, (Hon.); Univ. Coll. of Med., Va., 1899	1899	1900
Lane, Bessie, Raleigh; Women's Med. Coll. of Pa., 1921	1921	1926
Lawrence, B. J., Raleigh; Jeff. Med. Coll,. 1918; U. N. C.	1918	1920
Liles, L. C., Raleigh; Med. Coll. of Va., 1930; U. N. C.	1930	1933
Lowery, E. F., Raleigh; Univ. of Louisville, 1917	.....	1934
McDowell, F. C., Siler City; Univ. of Pa., 1902	1913	1916
McGee, James Wm., Raleigh, (Hon.); Bellevue Hosp. Med. Coll., 1888	1888	1888
McGee, Robert L., Raleigh; Univ. of Pa., 1932	1932	1935
McKee, John S., Raleigh; Univ. of Md., 1907	1908	1909
McLeod, N. H., Raleigh; Univ. of Pa., 1930; U. N. C.	1930	1932
Mackie, Geo. C., Wake Forest; Univ. of Pa., 1928; Wake Forest	1928	1932
Mitchener, J. S., Raleigh; Johns Hopkins Univ., 1915	1915	1918
Neal, Kemp P., Raleigh; Harvard, 1917	1920	1921
Neal, Paul N., Raleigh; Harvard, 1919	1920	1921
Noble, R. P., Raleigh; Univ. of N. C., 1907	1907	1916
Norton, Roy, Raleigh; Vanderbilt, 1928; U. N. C.	1928	1932
Oliver, A. S., Raleigh; Jeff. Med. Coll., 1914; U. N. C.	1914	1919
Owen, J. F., Dix Hill, Raleigh; Jeff. Med. Coll.; Wake Forest, 1918	1920	1927
Powers, Frank P., Raleigh; Univ. of Pa., 1927; Wake Forest	1927	1928
Proctor, I. M., Raleigh; Univ. of N. C., 1913; Univ. of Pa	1915	1915
Rand, E. G. Raleigh; Univ. of Pa., 1926; U. N. C.	1926	1929
Ray, O. L., Raleigh, (Hon.); Univ. Coll. of Med., Richcmond, 1899	1899	1904
Rhodes, J. S., Raleigh; Harvard, 1929; U. N. C.	1929	1936
Richardson, W. P., Chapel Hill; Med. Coll. of Va., 1928; Wake Forest	1928	1929
Rogers, Jas. Rufus, Raleigh, (Hon.); P. and S., Balt., 1886	1886	1904

Name and Address	Licensed	Joined State Society
Root, Aldert S., Raleigh; Univ. of Pa., 1911	1911	1913
Royster, Hubert A., Raleigh, (Hon.); Univ. of Pa., 1894	1894	1895
Ruark, R. J., Raleigh; Univ. Pa., 1931	1931	1934
Smith, Sidney, Prof. Bldg., Raleigh; Tulane Univ., 1925; U. N. C.	1925	1930
Smith, W. G., Wendell; Med. Coll. of Va., Wake Forest, 1923	1926	1928
Stimpson, R. T., Raleigh; Univ. of Pa., U. N. C.	1927	1929
Thompson, Hugh A., Raleigh; Univ. of Pa., 1914	1914	1917
Turner, H. G., Raleigh; Univ. of Pa., 1906; U. N. C.	1907	1925
Wall, Roger I., Raleigh; Tulane Univ., 1934	1934	1937
Ward, W. T., Raleigh; Univ. of Md., 1925	1925	1927
Watson, John B., Raleigh; Univ. of N. C., 1908	1908	1909
Weathers, R. R., Knightdale; Richmond Med. Coll.; Wake Forest	1926	1928
West, Louis N., Raleigh; Jeff. Med. Coll., 1912; U. N. C.	1912	1915
Wilkerson, Charles B., Raleigh; Univ. of N. C., 1906	1906	1908
Wilkinson, C. T., Wake Forest; Tulane Univ., 1922; Wake Forest	1922	1923
Wilkinson, R. W., Jr., Wake Forest; Tulane Univ., 1922; Wake Forest	1923	1924
Williams, Chas. F., Raleigh; Jeff. Med. Coll., 1934	1934	1937
Wilson, Frank, Jr., Raleigh; Univ. of Md., 1932	1932	1937
Wrenn, S. M., Bay Pines, Fla.;	.....	1936
Wright, J. B., Raleigh, (Hon.); Univ. Coll. of Med. Va., 1899; U. N. C.	1899	1900
Yarborough, Frank R., Cary; University of Pa., 1923; U. N. C.	1925	1926

WARREN COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Foster, H. H., Norlina; Jeff. Med. Coll., 1919	1919	1923
Peete, C. H., Warrenton; Univ. of Pa., 1903	1906	1911

WASHINGTON—SEE MARTIN- WASHINGTON-TYRELL

WATAUGA-ASHE COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Hagaman, J. B., Boone; 1915	1915	1915
Jones, D. C., Lansing; Univ. of Pa., 1927	1930	1930
Jones, T. Lester, Lansing; Va. Med. Coll., 1909; U. N. C.	1909	1917
King, Robt. Rogers, Boone, Med. Dept. Univ. of Ark.	1931	1932
Perry, H. B., Boone; N. C. Med. Coll., 1905	1905	1922

WAYNE COUNTY SOCIETY

President: L. A. Warwick, Goldsboro; Geo. Washington Univ., 1923; Wake Forest	1923	1924
Secretary: L. J. Harrell, Goldsboro; Univ. of Md., 1930; Wake Forest	1930	1934
Benton, Geo. Ruffin, Goldsboro; Med. Coll. of Va., 1901	1905	1904
Best, D. E., Goldsboro; Univ. of Md., 1924; Wake Forest, 1922	1924	1926
Bizzell, M. E., Goldsboro; Tulane Univ., 1923; U. N. C.	1923	1925
Brown, C. R., Goldsboro; S. C. Med. Coll., 1934	1934	1937
Cobb, Donnell B., Goldsboro; Univ. of Pa., 1921; U. N. C.	1921	1926
Cobb, W. H., Jr., Goldsboro, (Hon.); Jeff. Med. Coll., 1889	1889	1890
Crawford, W. J., Goldsboro; Med. Coll. of Va., 1922	1922	1923

Name and Address	Licensed	Joined State Society
Dale, G. C., Goldsboro; Univ. of Pa., 1925; U. N. C.	1925	1927
Ham, Clem, Goldsboro; Med. Coll. of S. C., 1926	1929	1930
Henderson, C. C., Olive; Univ. of Md., 1914; U. N. C.	1914	1919
Howard, C. E., Goldsboro; Univ. of Pa., 1925; U. N. C.	1925	1927
Irwin, Henderson, Eureka; Univ. of Md., 1912	1914	1916
Ivey, H. B., Goldsboro; Univ. Coll. of Med., Richmond, 1911; Wake Forest	1911	1917
Linville, W. C., Goldsboro; Univ. of Md., 1903; U. N. C.	1903	1923
Long, I. C., Goldsboro;	.....	1937
McCuiston, A. M., Mount Olive; N. C. Med. Coll., 1911	1911	1917
McPheeters, S. B., Goldsboro; Washington Univ., 1906	1933	1934
Miller, Robert B., Goldsboro, (Hon.); Med. Coll. of Va., 1898; U. N. C.	1900	1902
Person, Edgar Cooper, Pikeville; Med. Coll. of Va., 1905	1905	1908
Rand, C. H., Fremont; Univ. of Pa.; U. N. C.	1926	1928
Smith, Wm. H., Goldsboro; Univ. of Pa., 1906; U. N. C.	1907	1912
Strosnider, Charles F. Goldsboro; Univ. of Md., 1909	1910	1913
Sutton, William G., Seven Springs; Jeff. Med. Coll., 1889	1889	1896
Whelpley, Frank L., Goldsboro; Missouri Univ., 1902	1918	1918
Wilkins, J. W., Mount Olive; Med. Coll. of Va., 1913; U. N. C.	1913	1917
Woodard, A. G., Goldsboro; Univ. of N. C., 1907	1907	1909
Zealy, A. H., Jr., Goldsboro; Harvard, 1930	1932	1934

WILKES-ALLEGHANY COUNTIES SOCIETY

President: E. N. Phillips, North Wilkesboro; Med. Coll. of Va., 1930	1930	1935
Secretary: James H. McNeill, North Wilkesboro; Geo. Wash. Univ. Med. School, 1926	1926	1927
Eller, Albert J., Wilkesboro, (Hon.); P. and S., Balt., 1893	1895	1898
Gilreath, Frank H., N. Wilkesboro, (Hon.); Univ. of Nashville, 1898	1898	1898
Hubbard, Fred C., North Wilkesboro; Jeff. Med. Coll., 1918; U. N. C.	1919	1921
Hutchens, E. M., North Wilkesboro, (Hon.); N. C. Med. Coll., 1896	1896	1904
Miles, Walter W., Champion; Univ. of Tenn. Med., 1931	1933	1934
Mitchell, G. T., Wilkesboro; Jeff. Med. Coll., 1927; U. N. C.	1927	1928
Newton, Wm. K., North Wilkesboro; Med. Coll. of Va., 1931	1932	1933
Sink, C. S., North Wilkesboro; N. C. Med. Coll., 1912	1912	1913
Smith, Harold Benj., North Wilkesboro; Med. Coll. of S. C.	1929	1930
Thompson, C. A., Sparta; Med. Coll. Va., 1924; Wake Forest	1925	1935
Triplett, W. R., Purlear; N. C. Med. Coll., 1914	1915	1920

WILSON COUNTY SOCIETY

President: T. G. Bradshaw, Wilson; Med. Coll. of Va., 1909	1924	1924
Secretary: Badie T. Clark, Wilson; Univ. Ga., 1930	1934	1935
Anderson, Wade H., Wilson, (Hon.); Univ. of Va., 1902	1904	1904
Bell, G. E., Wilson; Jeff. Med. Coll., 1921; Wake Forest, 1919	1921	1922
Best, Henry B., Wilson; Univ. of N. C., 1907	1907	1908
Blackshear, T. J., Wilson; Emory Univ., 1914	1923	1924
Darden, D. B., Stantonsburg; Univ. of Pa., 1921; U. N. C.	1924	1926
Dickinson, Elijah T., Wilson, (Hon.); Med. Coll. of Va., 1895	1895	1900
Fike, Ralph L., Wilson; Med. Coll. S. C., 1932	1933	1934
Hunter, W. C., Wilson; Univ. of Pa., 1928; U. N. C.	1928	1931
McClees, E. C., Elm City; Med. Coll. of Va., 1917	1920	1920

Name and Address	Licensed	Joined State Society
Mitchell, G. W., Wilson; Univ. of Coll. Med., Va., 1913	1913	1920
Moore, Chas. E., Wilson, (Hon.); Bellevue Hosp. Med. Coll., 1875	1875	1875
Mullen, Malcolm P., Wilson; Emory Univ. Med School, 1927; Wake Forest	1927	1928
Pittman, M. A., Wilson; Jeff. Med. Coll., 1921; Wake Forest, 1919	1924	1923
Putney, R. H., Elm City; Med. Coll. of Va., 1914	1914	1920
Saliba, Michael M., Wilson; Balt. Med. Coll., 1897	1910	1910
Simons, C. E., Wilson; 1930; U. N. C.	1930	1935
Smith, A. Jones, Black Creek; Univ. of Pa., 1921; U. N. C.	1921	1923
Smith, F. G., Wilson; Univ. Ga. Med. Dept., 1922	1927	1931
Strickland, Arthur T., Wilson; Wash. Univ., 1932; U. N. C.	1932	1935
Strickland, Ernest L., Wilson; Med. Coll. of Va., 1916	1916	1917
Williams, Albert F., Wilson, (Hon.); Univ. of Md., 1901; U. N. C.	1901	1904
Woodard, C. A., Wilson; Univ. of Va., 1904	1904	1920
Woodard, G. B., Wilson; Med. Coll. of Va., 1915	1915	1916

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PRESSES OF
CHRISTIAN PRINTING COMPANY
DURHAM, N. C.